

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

ILIFE TECHNOLOGIES, INC.,	§	
	§	
Plaintiff,	§	
	§	Civil Action No. 3:13-cv-04987
v.	§	
	§	
NINTENDO OF AMERICA INC.,	§	
	§	
Defendant.	§	

APPENDIX IN SUPPORT OF PLAINTIFF'S MOTION FOR PROTECTIVE ORDER

Pursuant to the Federal Rules of Civil Procedure and the Court's Local Rules, Plaintiff iLife Technologies, Inc. files this Appendix in Support of its Motion for Protective Order.

Exhibit No.	Description	Appendix Citation
A	Declaration of S. Wallace Dunwoody in Support of Plaintiff's Motion for Protective Order	3 - 4
B	Defendant Nintendo of America Inc.'s Notice of Subpoena and Deposition of Michael Horton	5 - 10
C	Excerpts from Defendant's Preliminary Invalidity Contentions, served Aug. 18, 2014, including Ex. 5F and Ex. 33F	11 - 75
D	November 28, 2016 - E-mail correspondence between counsel regarding Horton's deposition	76 - 78

Respectfully submitted,

/s/ Michael C. Wilson

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**ATTORNEYS FOR PLAINTIFF iLIFE
TECHNOLOGIES, INC.**

CERTIFICATE OF SERVICE

This is to certify that a true and correct copy of this document has been served via the Court's CM/ECF, in accordance with the Federal Rules of Civil Procedure on December 5, 2016.

/s/ Michael C. Wilson

Michael C. Wilson

712438.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

ILIFE TECHNOLOGIES, INC.,	§	
	§	
Plaintiff,	§	
	§	
v.	§	Civil Action No. 3:13-cv-4987
	§	
NINTENDO OF AMERICA, INC.,	§	JURY TRIAL DEMANDED
Defendant.	§	
	§	

**DECLARATION OF S. WALLACE DUNWOODY IN SUPPORT
OF PLAINTIFF’S MOTION FOR PROTECTIVE ORDER**

1. My name is S. Wallace Dunwoody. I am over the age of 21 years and have never been convicted of a felony or a crime involving moral turpitude. The statements in this Declaration are based on my own personal knowledge.

2. I am the counsel of record in this matter for Plaintiff iLife Technologies, Inc. (“iLife”). I am familiar with the claims and defenses asserted in this matter as well as the documents produced in this case.

3. This appendix includes true and correct copies of the following documents:

Exhibit No.	Description	Appendix Citation
A	Declaration of S. Wallace Dunwoody in Support of Plaintiff’s Motion for Protective Order	3 - 4
B	Defendant Nintendo of America Inc.’s Notice of Subpoena and Deposition of Michael Horton	5 - 10
C	Excerpts from Defendant’s Preliminary Invalidity Contentions, served Aug. 18, 2014, including Ex. 5F and Ex. 33F	11 - 75
D	November 28, 2016 - E-mail correspondence between counsel regarding Horton’s deposition	76 - 78

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 5, 2016, at Dallas, Texas.

/s/ S. Wallace Dunwoody
S. Wallace Dunwoody

712367v1

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION**

ILIFE TECHNOLOGIES, INC.,

Plaintiff,

v.

NINTENDO OF AMERICA INC.,

Defendant.

§
§
§
§
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§

Case No. 3:13-cv-04987

Jury Trial Demanded

**DEFENDANT NINTENDO OF AMERICA INC.'S NOTICE OF SUBPOENA AND
DEPOSITION OF MICHAEL HORTON**

PLEASE TAKE NOTICE that Defendant Nintendo of America Inc. ("NOA") shall take the deposition of Michael Horton on December 8, 2016 at 9:00 a.m. at 3175 Hanover Street, Palo Alto, California 94304. A copy of the subpoena that Mr. Horton has agreed to accept service of and that was provided to him via email and Federal Express is attached as Exhibit A. The deposition will be conducted before a certified reporter or notary public duly authorized to administer oaths and transcribe sworn testimony and will continue from day-to-day until completed. The deposition may also be videotaped.

Dated: November 30, 2016

Respectfully submitted,

/s/ Thomas C. Wright

Thomas C. Wright

Texas State Bar No. 24028146

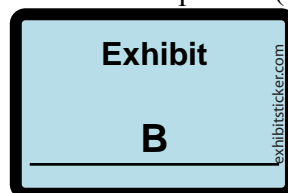
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*Attorneys for Defendant
Nintendo of America Inc.*

CERTIFICATE OF SERVICE

The undersigned certifies that a true and correct copy of the foregoing document was served via email upon all counsel of record on November 30, 2016.

/s/ Thomas C. Wright
Thomas C. Wright

Exhibit “A”

AO 88A (Rev. 12/13) Subpoena to Testify at a Deposition in a Civil Action

UNITED STATES DISTRICT COURT

for the

Northern District of Texas

iLife Technologies, Inc.

Plaintiff

v.

Nintendo of America Inc.

Defendant

Civil Action No. 3:13-cv-4987

SUBPOENA TO TESTIFY AT A DEPOSITION IN A CIVIL ACTION

To:

Michael Horton

1027 Mountain View Ave, Mountain View, CA 94040

(Name of person to whom this subpoena is directed)

☒ **Testimony:** YOU ARE COMMANDED to appear at the time, date, and place set forth below to testify at a deposition to be taken in this civil action. If you are an organization, you must designate one or more officers, directors, or managing agents, or designate other persons who consent to testify on your behalf about the following matters, or those set forth in an attachment:

Place: Cooley LLP
3175 Hanover Street
Palo Alto, CA, 94304

Date and Time:

12/08/2016 9:00 am

The deposition will be recorded by this method: stenographer, video, and Livenote or equivalent

☐ **Production:** You, or your representatives, must also bring with you to the deposition the following documents, electronically stored information, or objects, and must permit inspection, copying, testing, or sampling of the material:

The following provisions of Fed. R. Civ. P. 45 are attached – Rule 45(c), relating to the place of compliance; Rule 45(d), relating to your protection as a person subject to a subpoena; and Rule 45(e) and (g), relating to your duty to respond to this subpoena and the potential consequences of not doing so.

Date: 11/30/2016

CLERK OF COURT

OR

/s/ Thomas C. Wright

Signature of Clerk or Deputy Clerk

Attorney's signature

The name, address, e-mail address, and telephone number of the attorney representing (name of party) Nintendo of America Inc., who issues or requests this subpoena, are:

Thomas C. Wright, Cunningham Swaim LLP, 7557 Rambler Rd, Suite 440 Dallas, TX 75231,
twright@cunninghamswaim.com 214-646-1495

Notice to the person who issues or requests this subpoena

If this subpoena commands the production of documents, electronically stored information, or tangible things, a notice and a copy of the subpoena must be served on each party in this case before it is served on the person to whom it is directed. Fed. R. Civ. P. 45(a)(4).

AO 88A (Rev. 12/13) Subpoena to Testify at a Deposition in a Civil Action (Page 2)

Civil Action No. 3:13-cv-4987

PROOF OF SERVICE

(This section should not be filed with the court unless required by Fed. R. Civ. P. 45.)

I received this subpoena for *(name of individual and title, if any)* _____
on *(date)* _____

☐ I served the subpoena by delivering a copy to the named individual as follows: _____

_____ on *(date)* _____ ; or

☐ I returned the subpoena unexecuted because: _____

Unless the subpoena was issued on behalf of the United States, or one of its officers or agents, I have also
tendered to the witness the fees for one day's attendance, and the mileage allowed by law, in the amount of
\$ _____

My fees are \$ _____ for travel and \$ _____ for services, for a total of \$ 0.00

I declare under penalty of perjury that this information is true.

Date: _____

Server's signature

Printed name and title

Server's address

Additional information regarding attempted service, etc.:

AO 88A (Rev. 12/13) Subpoena to Testify at a Deposition in a Civil Action (Page 3)

Federal Rule of Civil Procedure 45 (c), (d), (e), and (g) (Effective 12/1/13)**(c) Place of Compliance.**

(1) *For a Trial, Hearing, or Deposition.* A subpoena may command a person to attend a trial, hearing, or deposition only as follows:

- (A) within 100 miles of where the person resides, is employed, or regularly transacts business in person; or
- (B) within the state where the person resides, is employed, or regularly transacts business in person, if the person
 - (i) is a party or a party's officer; or
 - (ii) is commanded to attend a trial and would not incur substantial expense.

(2) *For Other Discovery.* A subpoena may command:

- (A) production of documents, electronically stored information, or tangible things at a place within 100 miles of where the person resides, is employed, or regularly transacts business in person; and
- (B) inspection of premises at the premises to be inspected.

(d) Protecting a Person Subject to a Subpoena; Enforcement.

(1) *Avoiding Undue Burden or Expense; Sanctions.* A party or attorney responsible for issuing and serving a subpoena must take reasonable steps to avoid imposing undue burden or expense on a person subject to the subpoena. The court for the district where compliance is required must enforce this duty and impose an appropriate sanction—which may include lost earnings and reasonable attorney's fees—on a party or attorney who fails to comply.

(2) *Command to Produce Materials or Permit Inspection.*

(A) *Appearance Not Required.* A person commanded to produce documents, electronically stored information, or tangible things, or to permit the inspection of premises, need not appear in person at the place of production or inspection unless also commanded to appear for a deposition, hearing, or trial.

(B) *Objections.* A person commanded to produce documents or tangible things or to permit inspection may serve on the party or attorney designated in the subpoena a written objection to inspecting, copying, testing, or sampling any or all of the materials or to inspecting the premises—or to producing electronically stored information in the form or forms requested. The objection must be served before the earlier of the time specified for compliance or 14 days after the subpoena is served. If an objection is made, the following rules apply:

- (i) At any time, on notice to the commanded person, the serving party may move the court for the district where compliance is required for an order compelling production or inspection.
- (ii) These acts may be required only as directed in the order, and the order must protect a person who is neither a party nor a party's officer from significant expense resulting from compliance.

(3) Quashing or Modifying a Subpoena.

(A) *When Required.* On timely motion, the court for the district where compliance is required must quash or modify a subpoena that:

- (i) fails to allow a reasonable time to comply;
- (ii) requires a person to comply beyond the geographical limits specified in Rule 45(c);
- (iii) requires disclosure of privileged or other protected matter, if no exception or waiver applies; or
- (iv) subjects a person to undue burden.

(B) *When Permitted.* To protect a person subject to or affected by a subpoena, the court for the district where compliance is required may, on motion, quash or modify the subpoena if it requires:

(i) disclosing a trade secret or other confidential research, development, or commercial information; or

(ii) disclosing an unretained expert's opinion or information that does not describe specific occurrences in dispute and results from the expert's study that was not requested by a party.

(C) *Specifying Conditions as an Alternative.* In the circumstances described in Rule 45(d)(3)(B), the court may, instead of quashing or modifying a subpoena, order appearance or production under specified conditions if the serving party:

- (i) shows a substantial need for the testimony or material that cannot be otherwise met without undue hardship; and
- (ii) ensures that the subpoenaed person will be reasonably compensated.

(e) Duties in Responding to a Subpoena.

(1) *Producing Documents or Electronically Stored Information.* These procedures apply to producing documents or electronically stored information:

(A) *Documents.* A person responding to a subpoena to produce documents must produce them as they are kept in the ordinary course of business or must organize and label them to correspond to the categories in the demand.

(B) *Form for Producing Electronically Stored Information Not Specified.* If a subpoena does not specify a form for producing electronically stored information, the person responding must produce it in a form or forms in which it is ordinarily maintained or in a reasonably usable form or forms.

(C) *Electronically Stored Information Produced in Only One Form.* The person responding need not produce the same electronically stored information in more than one form.

(D) *Inaccessible Electronically Stored Information.* The person responding need not provide discovery of electronically stored information from sources that the person identifies as not reasonably accessible because of undue burden or cost. On motion to compel discovery or for a protective order, the person responding must show that the information is not reasonably accessible because of undue burden or cost. If that showing is made, the court may nonetheless order discovery from such sources if the requesting party shows good cause, considering the limitations of Rule 26(b)(2)(C). The court may specify conditions for the discovery.

(2) Claiming Privilege or Protection.

(A) *Information Withheld.* A person withholding subpoenaed information under a claim that it is privileged or subject to protection as trial-preparation material must:

- (i) expressly make the claim; and
- (ii) describe the nature of the withheld documents, communications, or tangible things in a manner that, without revealing information itself privileged or protected, will enable the parties to assess the claim.

(B) *Information Produced.* If information produced in response to a subpoena is subject to a claim of privilege or of protection as trial-preparation material, the person making the claim may notify any party that received the information of the claim and the basis for it. After being notified, a party must promptly return, sequester, or destroy the specified information and any copies it has; must not use or disclose the information until the claim is resolved; must take reasonable steps to retrieve the information if the party disclosed it before being notified; and may promptly present the information under seal to the court for the district where compliance is required for a determination of the claim. The person who produced the information must preserve the information until the claim is resolved.

(g) Contempt.

The court for the district where compliance is required—and also, after a motion is transferred, the issuing court—may hold in contempt a person who, having been served, fails without adequate excuse to obey the subpoena or an order related to it.

For access to subpoena materials, see Fed. R. Civ. P. 45(a) Committee Note (2013).

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

ILIFE TECHNOLOGIES, INC.,

Plaintiff,

v.

NINTENDO OF AMERICA INC.,

Nintendo.

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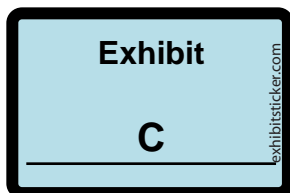
Case No. 3:13-cv-04987

Jury Trial Demanded

**PRELIMINARY INVALIDITY CONTENTIONS OF
NINTENDO OF AMERICA INC.**

Nintendo of America Inc. (“NOA”) submits the following Preliminary Invalidity Contentions regarding United States Patent Nos. 6,307,481, 6,703,939, 6,864,796, 7,095,331, 7,145,461 and 7,479,890 (collectively, the “Patents-in-Suit”) pursuant to Misc. Order 62, Rules 3.3 and 3.4 and the Joint Status Report (Dkt. No. 28) entered in this litigation. NOA makes these Invalidity Contentions based on its present understanding of Plaintiff iLife Technologies, Inc.’s (“iLife” or “Plaintiff”) Infringement Contentions and the contended scope of the asserted claims.

The following contentions are based on NOA’s current understanding of the asserted claims and iLife’s deficient infringement contentions, which appear to be based on broad interpretations of the asserted patents. Accordingly, these Invalidity Contentions may reflect various potential and alternative positions regarding claim construction and scope. To the extent these contentions reflect or suggest a particular interpretation or reading of any claim element not construed by the Court, NOA does not adopt, advocate, or acquiesce in such interpretation or reading. Nor do these contentions constitute any admission by NOA that any accused products, including any current or past versions of those products, are covered by any asserted claim. Moreover, to the extent that prior art cited for a particular limitation discloses functionality that



is the same or similar in some respects to the alleged functionality in the accused products as set forth in Plaintiff's Infringement Contentions, NOA does not concede that those limitations are in fact met by those accused functionalities.

NOA further reserves the right to seek to supplement and amend these disclosures and associated document production based on further investigation, analysis, and discovery, and NOA's consultation with experts and others. Because NOA is continuing their search for and analysis of relevant prior art, NOA reserves the right to seek to revise, amend, and/or supplement the information provided herein, including identifying, charting, and/or relying upon additional prior art references, relevant disclosures, and bases for invalidity contentions. Additional prior art, disclosures, and other information, whether or not cited in this disclosure and whether known or not known to NOA may become relevant as investigation, analysis, and discovery continue.

NOA is currently unaware of the extent, if any, to which Plaintiff will contend that limitations of the asserted claims are not disclosed in the prior art identified by NOA. To the extent that such an issue arises, NOA reserves the right to identify and rely upon other references or portions of references regarding the allegedly missing limitation(s).

Additionally, because discovery is ongoing, NOA reserves the right to present additional prior art references and/or disclosures under 35 U.S.C. §§ 102(a), (b), (e), (f), and/or (g), and/or § 103, located during the course of such discovery or further investigation, and to assert invalidity under 35 U.S.C. §§ 102(c), (d), or (f), to the extent that such discovery or investigation yields information forming the basis for such invalidity.

I. IDENTITY OF EACH ITEM OF PRIOR ART THAT ANTICIPATES EACH ASSERTED CLAIM OR RENDERS IT OBVIOUS: PATENT LOCAL RULE 3-3(a)(1)

The claim charts attached as Exhibits 1–45 identify each item of prior art that anticipates each asserted claim or renders it obvious. In addition, Exhibit 46 identifies additional items of

prior art that NOA may rely upon for additional anticipation and/or obviousness arguments. NOA's investigation of the prior art is ongoing. NOA expressly reserves the right to rely upon other prior art, including products that embody the patents, in supplemental invalidity arguments.

Certain prior art publications identified below describe or are otherwise associated with corresponding prior art systems. NOA may rely on these publications to provide evidence or corroboration of prior invention under the provisions of 35 U.S.C. § 102. In addition, NOA may also rely on each prior art publication as an independent basis for invalidity separate and distinct from its corresponding prior art system and/or other related publications.

These invalidity contentions, in part, are based upon Plaintiff's apparent interpretations of the asserted claims of the asserted patents, to the extent those interpretations can be discerned from Plaintiff's infringement contentions in this case. NOA disagrees with Plaintiff's infringement contentions, and these invalidity contentions are not, and should not be construed as, an endorsement or acceptance of any of Plaintiff's contentions or interpretations of the asserted patents.

A. Prior Art Patents

Number	Country of Origin	Date of Issue	Anticipation and/or Obviousness¹	Exhibits
5,976,083 (Richardson)	USA	November 2, 1999 (filed July 30, 1997)	Anticipation and Obviousness	1A-1F
5,724,265 (Hutchings '265)	USA	March 3, 1998	Anticipation and Obviousness	2A-2F

¹ Specific claims that are anticipated and/or rendered obvious by these references are identified in the claim charts attached as Exhibits 1–45.

Number	Country of Origin	Date of Issue	Anticipation and/or Obviousness¹	Exhibits
6,122,960 (Hutchings '960)	USA	September 26, 2000 (filed December 16, 1998)	Anticipation and Obviousness	3A-3F
5,899,963 (Hutchings '963)	USA	May 4, 1999	Anticipation and Obviousness	4A-4F
5,615,132 (Horton '132)	USA	March 25, 1997	Anticipation and Obviousness	5A-5F
6,356,856 (Damen)	USA	March 12, 2002 (filed February 22, 1999)	Anticipation and Obviousness	6A-6F
5,636,146 (Flentov)	USA	June 3, 1997	Anticipation and Obviousness	7A-7F
6,095,991 (Krausman)	USA	August 1, 2000 (filed July 23, 1998)	Anticipation and Obviousness	8A-8F
6,160,478 (Jacobsen)	USA	December 12, 2000 (filed October 27, 1998)	Anticipation and Obviousness	9A-9F
5,440,492 (Kozah)	USA	August 8, 1995	Obviousness	10C
5,587,558 (Matsushima)	USA	December 24, 1996	Obviousness	11C
6,044,297 (Sheldon '297)	USA	March 28, 2000 (filed September 25, 1998)	Anticipation and Obviousness	12A-12F
5,593,431 (Sheldon '431)	USA	January 14, 1997	Anticipation and Obviousness	13A-13F
5,725,562 (Sheldon '562)	USA	March 10, 1998	Anticipation and Obviousness	14A-14F
CA1,296,426 (Tennes)	Canada	February 25, 1992	Anticipation and Obviousness	15A-15F
4,110,741 (Hubert)	USA	August 29, 1978	Obviousness	38A-38F
4,699,379 (Chateau)	USA	October 13, 1987	Anticipation and Obviousness	35A-35F

Number	Country of Origin	Date of Issue	Anticipation and/or Obviousness ¹	Exhibits
6,073,748 (Yee)	USA	June 15, 1998	Anticipation and Obviousness	42A-42F
6,150,947 (Shima)	USA	November 21, 2000	Anticipation and Obviousness	45A-45F

B. Prior Art Published Patent Applications

Number	Country of Origin	Date of Publication	Anticipation and/or Obviousness ²	Exhibits
EP 0 816 986 (Unuma)	Europe	July 1, 1998	Anticipation and Obviousness	16A-16F
GB 2 323 196 (Cameron)	United Kingdom	September 16, 1998	Anticipation and Obviousness	17A-17F
EP 0 877 346 A1 (Depeursinge)	France	November 11, 1998	Anticipation and Obviousness	18A-18F
JP 10-295649 (Akiba)	Japan	November 10, 1998	Anticipation and Obviousness	34A-34F
JP 09-40483 (Okuno)	Japan	February 13, 1998	Anticipation and Obviousness	37A-37F
JP 10-011683 (Shoji)	Japan	January 16, 1998	Obviousness	41A-F
JP 10-165395 (Takahide)	Japan	June 23, 1998	Anticipation and Obviousness	36A-36F
JP 11-144172 (Hiroshi)	Japan	May 28, 1999	Obviousness	43A-43F
JP 10-111990 (Takahashi)	Japan	April 28, 1998	Obviousness	44A-44F

² Specific claims that are anticipated and/or rendered obvious by these references are identified in the claim charts attached as Exhibits 1-45.

C. Prior Art Publications

Title	Date of Publication	Author and Publisher (where feasible)	Anticipation and/or Obviousness³	Exhibit
<i>Inertial-Optical Motion-Estimating Camera for Electronic Cinematography</i> (Verplaetse Thesis)	1997	Christopher James Verplaetse	Anticipation and Obviousness	19A-19F
<i>Inertial Proprioceptive Devices: Self-motion-sensing Toys and Tools</i> (Verplaetse Article)	1996	Christopher James Verplaetse IBM Systems Journal Vol. 35, Nos. 3 &4	Anticipation and Obviousness	20A-20F
<i>Detection of Static and Dynamic Activities Using Uniaxial Accelerometers</i> (Veltink 1996 Article)	December 1996	Peter H. Veltink, Hans B.J. Bussmann, Weibe de Vries, Wim L.J. Martens, Rob C. Van Lummel IEEE Transactions on Rehabilitation Engineering, Vol. 4, No. 4.	Anticipation and Obviousness	21A-21F
<i>The Feasibility of Posture and Movement Detection by Accelerometry</i> (Veltink 1993 Article)	1993	Peter H. Veltink, Hans B.J. Bussmann, Frank Koelma, Henry M. Franken, Wim L.J. Martens, Rob C. van Lummel Engineering in Medicine and Biology Society, 1993, IEEE 15 th Annual Conference	Anticipation and Obviousness	22A-22F

³ Specific claims that are anticipated and/or rendered obvious by these references are identified in the claim charts attached as Exhibits 1-45.

Title	Date of Publication	Author and Publisher (where feasible)	Anticipation and/or Obviousness³	Exhibit
<i>Towards a New Method for Kinematic Quantification of Bradykinesia in Patients with Parkinson's Disease Using Triaxial Accelerometry</i> (Veltink 1995 Article)	1995	Peter H. Veltink, Erwin G. Old Engberink, Bob J. van Hilten, Rob Dunnewold, Cathrien Jacobi Engineering in Medicine and Biology Society, 1995, IEEE 17 th Annual Conference (Volume 2)	Anticipation and Obviousness	23A-23F
<i>A Triaxial Accelerometer and Portable Data Processing Unit for the Assessment of Daily Physical Activity</i> (Bouten March 1997 Article)	March 1997	Carlijin V.C. Bouten, Karel T.M. Koekkoek, Maarten Verduin, Rens Kodde, Jan D. Janssen IEEE Transactions on Biomedical Engineering, Vol. 44, No. 3	Anticipation and Obviousness	24A-24F
<i>Assessment of Energy Expenditure for Physical Activity Using a Triaxial Accelerometer</i> (Bouten 1994 Article)	1994	Carlijin V. Bouten, Klaas R. Westerterp, Maarten Verduin, Jan D. Janssen Medicine and Science in Sports and Exercise, Official Journal of the American College of Sports Medicine	Anticipation and Obviousness	25A-25F

Title	Date of Publication	Author and Publisher (where feasible)	Anticipation and/or Obviousness³	Exhibit
<i>Daily Physical Activity Assessment: Comparison Between Movement Registration and Doubly Labeled Water</i> (Bouten 1996 Article)	1996	Carlijin V.C. Bouten, Wilhelmine P. H. G. Verboeket-Van De Venne, Klaas R. Westerterp, Maarten Verduin, Jan D. Janssen The American Physiological Society	Anticipation and Obviousness	26A-26F
<i>Effects of Placement and Orientation of Body-Fixed Accelerometers on the Assessment of Energy Expenditure During Walking</i> (Bouten January 1997 Article)	January 1997	Carlijin V.C. Bouten, A.A.H.J. Sauren, Maarten Verduin, Jan D. Janssen Medical & Biological Engineering & Computing	Anticipation and Obviousness	27A-27F
<i>Ambulatory Accelerometry to Quantify Motor Behaviour in Patients After Failed Back Surgery: A Validation Study</i> (Bussmann Article)	1998	J.B.J. Bussmann International Association for the Study of Pain, Elsevier Science B.V.	Anticipation and Obviousness	28A-28F
<i>Ambulatory Monitoring of Mobility-Related Activities in Rehabilitation Medicine</i> (Bussmann Dissertation)	1998	J.B.J. Bussmann	Anticipation and Obviousness	29A-29F

Title	Date of Publication	Author and Publisher (where feasible)	Anticipation and/or Obviousness ³	Exhibit
<i>Assessment of Posture and Motion by Multichannel Piezoresistive Accelerometer Recordings</i> (Fahrenberg Article)	1997	Jochen Fahrenberg, Friedrich Foerster, Manfred Smeja, Wolfgang Müller Psychophysiology, Cambridge University Press	Anticipation and Obviousness	30A-30F

D. Prior Art Systems

NOA also identifies systems (with related publications) as prior art under 35 U.S.C. §§ 102(a), (b), and/or (g)(2). Although NOA's investigation continues, information available to date, and provided below, shows that each system/product/process was (1) known or used by others in this country or described in a printed publication before the alleged invention of the claimed subject matter of the Asserted Claims; (2) in public use, on sale, and/or described in a printed publication in this country more than one year prior to the date of the application for the patents-in-suit; and/or (3) made in this country by another inventor who had not abandoned, suppressed, or concealed it. At this time, NOA identifies public information available to NOA regarding these systems. NOA intends to seek further information through third-party discovery and will supplement these Contentions as appropriate. NOA may also seek third-party discovery of source code and other non-public documentation for one or more of the systems disclosed herein and will likewise supplement these Contentions as appropriate. NOA identifies systems (with related publications) as prior art under 35 U.S.C. §§ 102(a), (b), and/or (g)(2):

1. Expressive Footwear System (Exhibit 31A-31F)

On information and belief, the MIT Media Lab's Expressive Footwear system, as known or used by others, publicly used, offered for sale, or sold by one or more of Messrs. Joseph

Paradiso and Eric Hu as early as 1997 at the First International Symposium on Wearable Computers (hereinafter “Expressive Footwear”). Expressive Footwear is described/depicted in at least the following:

Publications

- *Design and Implementation of Expressive Footwear*. J. Paradiso, K. Hsiao, A. Benbasat, Z. Teegarden, IBM Systems Journal, Volume 39, Nos. 3 & 4, October 2000, pp. 511-529
- *Expressive Footwear for Computer-Augmented Dance Performance*. J. Paradiso and E. Hu, in Proc. of the First International Symposium on Wearable Computers, Cambridge, MA., IEEE Computer Society Press, Oct. 13-14, 1997, pp. 165-166
- *FootNotes: Personal Reflections on the Development of Instrumented Dance Shoes and their Musical Applications*. J. Paradiso, in Quinz, E., ed., Digital Performance, Anomalie, digital_arts Vol. 2, Anomos, Paris, 2002, pp. 34-49
- *Interactive Music for Instrumented Dancing Shoes*. J. Paradiso, K. Hsiao and E. Hu, Proc. of the 1999 International Computer Music Conference, October 1999, pp. 453-456
- *The CyberShoe: A Wireless Multisensor Interface for a Dancer’s Feet*. Joseph Paradiso, Eric Hu, Kai-yuh Hsiao. Proc. of International Dance and Technology 99, Tempe AZ, Feb. 26-28, 1999, FullHouse Publishing, Lethbridge, Alberta, pp. 57-60, June 2000
- *Instrumented Footwear for Interactive Dance*. Joseph Paradiso, Eric Hu, and Kai-Yuh Hsiao. Proc. of the XII Colloquium on Musical Informatics, Gorizia, Italy, September 24-26, 1998, pp. 89-92
- *Applications of Expressive Footwear*, Eric Hu, M.Eng Thesis, MIT EECS Department and The MIT Media Laboratory, May 1999 (hereinafter “Hu Thesis”)

Video Clips

- Yuying testing musical mapping after the Wearables Fashion Show (October 1997)
- Yuying appearing in the Wearables Fashion Show (October 1997)
- Mia Keinanen trying the 1998 shoes out with early test mapping (September 1998)
- Brian Clarkson doing a gymnastics routine at the Tokyo Wearables Fashion Show, (during NIKOGRAPH in Nov. 98) while wearing one of the shoes (November 1998)
- Byron Suber (Cornell) demonstrating musical mapping with sensors engaged (January 1999)
- Jason Goodstone (Arizona State University) doing a live demo with the mapping above during a presentation at the International Dance and Technology (IDAT) conference, on February 27, 1999 (February 27, 1999)
- Joe Paradiso giving a live demonstration of the various signals coming out of the shoe
- Takei Minoru using the shoes for performance at a Media Lab exhibit during the March 1999 Tokyo Toy Fair (March 1999)
- Boston dancer Dawn Kramer improvising with the above shoe mapping (April 1999)
- Performance at the July 1999 American Dance Festival. (July 1999)
- New York choreographer Mark Haim improvising with the shoe system at the July 1999 American Dance Festival (July 1999)
- New York choreographer Mark Haim improvising with the shoe system at the Media Lab’s Sens@bles conference in Kresge Auditorium (October 20, 1999)
- Mark Haim’s performance at Kresge (October 20, 1999)
- Mark Dampolo demoing the system for the audience at the 2000 Discover Awards Ceremony at Disney World in Orlando (June 2000).
- TV broadcast about the Discover Awards Expo
- Excerpts of Mark Haim’s improvisational performances given at the Boston Museum of

Science on March 4, 2001. (March 4, 2001)

- Viennese dancer Chris Haring improvising with the shoes at a rehearsal prior to the show (September 2001)

2. G-Trax System (Exhibits 2A-2F, 3A-3F, 4A-4F, 32A-32F)

On information and belief, Acceleron Technologies, LLC's G-Trax system was known or used by others, publicly used, offered for sale, or sold by one or more of Messrs. Lawrence Hutchings and David Kodrin as early as 1998 (hereinafter "G-Trax"). On information and belief, the G-Trax system is described in at least the following documents:

- U.S. Patent No. 5,724,265 (Exhibits 2A-2F)
- U.S. Patent No. 5,899,963 (Exhibits 4A-4F)
- U.S. Patent No. 6,122,960 (Exhibits 3A-3F)
- U.S. Patent No. 6,305,221
- WO 1998/058236.⁴

3. Crossbow System (Exhibit 33A-33F)

On information and belief, Crossbow Technology, Inc.'s position and orientation sensing system was known or used by others, publicly used, offered for sale, or sold by one or more of Messrs. Mike Horton and Richard Newton as early as 1997 (hereinafter "Crossbow"). On information and belief, the Crossbow system is described in at least the following documents:

- U.S. Patent No. 5,615,132 (Exhibits 5A-5F)
- U.S. Patent No. 5,819,206

4. Veltink Ambulatory Monitoring System (Exhibits 21A-21F, 22A-22F, 28A-28F, 29A-29F)

On information and belief, a motion sensing system as known and used by others or publicly used by one or more of Peter H. Veltink, Hans B.J Bussmann, Frank Koelma, Henry M.

⁴ On information and belief, the G-Trax System, as described in at least the above cited references teaches at least the claim limitations indicated in Exhibits 2A-2F, 3A-3F, 4A-4F, 32A-32F. The citations to the '265, '963, and '960 patents; and other materials describing the G-Trax system are non-exhaustive and are provided for exemplary purposes only. To avoid duplication and cumulative excerpts, exemplary quotations and citations from certain of the above-mentioned references are listed throughout the above-referenced charts. Similar quotes and references can be found in other listed references. The Defendant reserves the right to rely upon additional evidence concerning the G-Trax System and related products developed or produced during the course of discovery.

Franken, Wim L.J. Martens and Rob C. van Lummel as early as the 1993 15th Annual International Conference of the IEEE Engineering in Medicine and Biology Society in San Diego, California (hereinafter “Veltink” system). On information and belief, the Veltink motion sensing system is described in at least the following documents:

- Veltink 1993 Article (Exhibits 22A-22F);
- Veltink 1996 Article (Exhibits 21A-21F);
- Bussmann Article (Exhibits 28A-28F);
- Bussmann Dissertation (Exhibits 29A-29F).⁵

5. Medtronic Pacemaker System (Exhibits 12A-12F, 13A-13F, 14A-14F)

On information and belief, a cardiac pacemaker system as known and used by others or publicly used by one or more of Todd Sheldon, William J. Combs, Mark K. Erickson, and Can Cinbis of Medtronic, Inc. at least as early as 1995 (hereinafter “Medtronic” system). The Medtronic pacemaker system is described in at least the following documents:

- U.S. Patent No. 6,044,297 (Exhibits 12A-12F);
- U.S. Patent No. 5,593,431 (Exhibits 13A-13F);
- U.S. Patent No. 5,725,562 (Exhibit 14A-14F).⁶

⁵ On information and belief, the Veltink System, as described in at least the above cited references teaches at least the claim limitations indicated in Exhibits 21A-21F, 22A-22F, 28A-28F, 29A-29F. The citations to the Veltink and Bussman literature; and other materials describing the Veltink system are non-exhaustive and are provided for exemplary purposes only. To avoid duplication and cumulative excerpts, exemplary quotations and citations from certain of the above-mentioned references are listed throughout the above-referenced charts. Similar quotes and references can be found in other listed references. The Defendant reserves the right to rely upon additional evidence concerning the Veltink System and related products developed or produced during the course of discovery.

⁶ On information and belief, the Medtronic System, as described in at least the above cited references teaches at least the claim limitations indicated in Exhibits 12A-12F, 13A-13F, 14A-14F. The citations to the '265, '963, and '960 patents; and other materials describing the Medtronic system are non-exhaustive and are provided for exemplary purposes only. To avoid duplication and cumulative excerpts, exemplary quotations and citations from certain of the above-mentioned references are listed throughout the above-referenced charts. Similar quotes and references can be found in other listed references. The Defendant reserves the right to rely upon additional evidence concerning the Medtronic System and related products developed or produced during the course of discovery.

6. Radica Play TV (Baseball and Ping Pong) (Exhibits 39A-F, 40A-F)

On information and belief, Radica Play TV Baseball and Play TV Ping Pong were known or used by others, publicly used, offered for sale, or sold in the United States as early as 2000. The Radica Play TV Baseball system is described at Exhibits 39A-39F. The Radica Play TV Ping Pong system is described at Exhibits 40A-40F.⁷

II. WHETHER EACH ITEM OF PRIOR ART ANTICIPATES EACH ASSERTED CLAIM OR RENDERS IT OBVIOUS (P.L.R 3.3(b))

While NOA believes many of the above identified prior art references anticipate the asserted claims, these references also serve as a basis for invalidity based on obviousness. “[I]t is commonly understood that prior art references that anticipate a claim will usually render that claim obvious....” *Cohesive Techs., Inc. v. Waters Corp.*, 543 F.3d 1351, 1364 (Fed. Cir. 2008) And to the extent any prior art item cited above may not fully disclose a limitation of an asserted claim or is alleged by Plaintiff to lack disclosure of the limitation, such limitation is present and identified in another prior art item as shown in the attached claim charts. It would have been obvious to combine the disclosed claim elements based on the teachings of other art in existence at that time, the general knowledge of a person of ordinary skill in the art, and the recognition of similarities between the art and the claimed features. On such basis, on an element-by-element basis, NOA expressly intends to combine one or more prior art items identified herein with each other to address any further contentions from Plaintiffs that a particular prior art item supposedly lacks one or more elements of an asserted claim. In other words, NOA contends that each charted prior art item can be combined with other charted prior art items when a particular prior

⁷ On information and belief, the Radica Play TV Systems, as described in at least the above cited references teaches at least the claim limitations indicated in Exhibits 39A-39F and 40A-40F. The citations to materials describing the Radica Play TV system are non-exhaustive and are provided for exemplary purposes only. The Defendant reserves the right to rely upon additional evidence concerning Radica Play TV Baseball and Radica Play TV Ping Pong Systems and related products developed or produced during the course of discovery.

art item lacks or does not explicitly disclose an element or feature of an asserted claim. The suggested obviousness combinations described below are not to be construed to suggest that any reference included in the combinations is not anticipatory. In particular, NOA is currently unaware of the extent, if any, to which plaintiffs will contend that limitations of the claims at issue are not disclosed in the art identified by NOA. To the extent that an issue arises with respect to any such limitation, NOA reserves the right to identify other references and combinations, which may make obvious the addition of the allegedly missing limitation to the disclosed device, method, system, or any related characteristics.

A person of skill in the art would have been motivated to combine the above-identified prior art items.⁸ As the United States Supreme Court held in *KSR Int'l. Co. v. Teleflex, Inc.*, 550 U.S. 398, 416 (2007): “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” The Supreme Court further held that, “[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *Id.* at 417. The Court has further held that “in many cases a person of ordinary skill will be able to fit the

⁸ “Factors that may be considered in determining level of ordinary skill in the art include: (1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Daiichi Sankyo Co., Ltd. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007) (quoting *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696 (Fed. Cir. 1983)). Here, a person of ordinary skill is likely to have at least a Bachelor’s degree in Electrical Engineering or Computer Science, or several years of experience in hardware or software design and at least some involvement using accelerometers.

teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420. It is sufficient that a combination of elements was “obvious to try” holding that, “[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.” *Id.* at 421. “In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.” *Id.* Finally, the Supreme Court recognized that “[g]ranting patent protection to advances that would occur in the ordinary course without real innovation retards progress and may, in the case of patents combining previously known elements, deprive prior inventions of their value or utility.” *Id.* at 419. All of the following rationales recognized in *KSR* support a finding of obviousness:

1. Combining prior art elements according to known methods to yield predictable results;
2. Simple substitution of one known element for another to obtain predictable results;
3. Use of known technique to improve similar devices (methods, or products) in the same way;
4. Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
5. “Obvious to try”—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
6. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other

market forces if the variations would have been predictable to one of ordinary skill in the art; and

7. Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Certain of these rationales are discussed more specifically below. The fact that others are not discussed more specifically should not be interpreted as an admission or concession that it does not apply. To the contrary, the discussion below simply provides more explanation of these specific rationales.

NOA further contends that the prior art identified in these Invalidity Contentions is evidence of simultaneous or near-simultaneous independent invention by others of the alleged invention as recited in one or more of the asserted claims. NOA reserves their right to rely on the simultaneous or near-simultaneous independent invention by others as further evidence of the obviousness of the asserted patents.

Each limitation of the asserted claims was well-known to those of ordinary skill in the art before September 15, 1999 (Plaintiff's claimed priority date for the Patents-in-suit) as detailed below. Although Plaintiff claims the invention was first conceived in June 1998, Plaintiff has not carried its burden to show that the patents-in-suit are entitled to an invention or priority date earlier than the date alleged above. Likewise, NOA does not concede that Plaintiff has met its burden to show that each of the patents-in-suit have written description support in alleged priority to United States Patent Application No. 09/396,991. Notably, most of the patents-in-suit are continuations-in-part from the '991 Application (e.g., U.S. Patent Nos. 6,703,939, 6,864,796,

7,095,331, 7,145,461 and 7,479,890), and accordingly include new matter that was not disclosed in the alleged priority application.

The elements recited in the asserted claims are mere combinations and modifications of these well-known elements. A person of ordinary skill in the art would be able, and motivated, to improve the existing technology in the same or similar manner by combining or modifying the individual elements that were already known in the art to yield predictable results. Many of the references identified herein share one or more common authors or inventors (i.e., Hutchings, Verplaetse, Veltink, Bussman, Sheldon). Accordingly, one of ordinary skill in the art would be motivated to combine these references due to common authorship in related fields of technology.

Further, many of the references identified disclose systems implementing accelerometer chips that were widely available for purchase in the late 1990s, such as Analog Devices' ADXL05, ADXL50 and ADXL202 accelerometers. *See, e.g.*, Hutchings '265 at 4:40-42 ("Accelerometers 2 are well known, such as those provided by Analog Devices model ADXL05"); Shima ("The accelerometer 122 is an Analog Devices ADXL202+/-2 g dual axis digital accelerometer chip."); Sheldon '297 at 12:40-43 ("Each of the DC accelerometers 72, 74, 76 depicted in FIG. 2 is preferably a surface micro-machined integrated circuit with signal conditioning, e.g., the Model ADXL50 accelerometer sold by Analog Devices, Inc., Norwood Mass."). *See also* Hutchings '960 at 8:10-12; Hutchings '963 at 5:7-9; Sheldon '431 at 10:26-29; Sheldon '562 at 9:33-36; Verplaetse Thesis at 30; Horton '132 at 3:63-65. These chips were capable of performing many, if not all, of the steps claimed by the asserted patents if provided the proper programming; indeed initial discovery by Plaintiff indicates its fall detector product contained the ADXL202 accelerometer. Accordingly, one of ordinary skill in the art would be

motivated to combine references discussing implementation of existing accelerometers with other references.

The prior art which anticipates and/or renders the asserted claims of the patents-in-suit obvious fall into several different categories, including fitness and sports monitoring devices, fall monitors, ambulatory monitors, and cardiac pacemakers. By the year 1999 a person of ordinary skill in the art would have been motivated to combine the references within each of these categories and also to combine the references between categories. Among other things, this motivation to combine was driven by emergence awareness and exposure of the field of wearable computers. As one example of this awareness, by 1999 the IEEE had held three International Symposiums on Wearable Computers. Those conferences, and others like them that were happening around the same time, brought together scientists and engineers working in different areas of the wearable computer field to share ideas.

The paper list from the Fourth ISWC, held October 16-17, 2000 in Atlanta Georgia, which features papers on various uses for accelerometers, drawn from across the categories mentioned above, is one example of bringing together scientists and engineers working in different areas of the wearable computer field around the time of the purported invention of the asserted patents.⁹ For example, one of the papers presented at the conference was on the Crossbow system,¹⁰ another was on using accelerometers to do head and hand positioning,¹¹ while other papers talked about medical applications, navigation, virtual reality and others. Thus, persons of skill in the art at the time were not *restricting* themselves to look within particular or narrow subfields, but instead were looking to use the techniques and teachings from

⁹ List of papers available at: <http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=888447>

¹⁰ <http://www.cs.bris.ac.uk/Publications/Papers/1000463.pdf>

¹¹ <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.14.5984&rep=rep1&type=pdf>

all aspects of wearable computing technology. Nor is this true only for the 2000 ISWC conference. The same pattern presents itself in the papers from earlier ISWC conferences¹² and from other conferences¹³ held prior to and around the time of the alleged invention of the patents in suit.

Indeed, if one reads the conference papers, one can see that there is a general focus on something called “context awareness” which is simply shorthand for figuring out the *context* surrounding a user. At the time, and as the conference proceedings show, persons of skill in the art were focused on figuring out how to using the input from wearable sensors to make deductions about the environment surrounding the user. In particular, they were sharing and combining techniques from a wide variety of specific wearable computer applications in order to make better inferences about the conditions and environment surrounding the user. For this reason, researchers were actively looking, and were well motivated, to combine techniques used in a wide variety of different specific applications of accelerometer data. Indeed, as the conference papers (and the creation of wearable computing projects at many major American universities around this same time)¹⁴ show, there was a focus among persons of skill in the art on combining diverse technologies to improve the context awareness of wearable computers.

¹² See e.g. 1999 Conference at <http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=6542>, including papers on using accelerometer data for positioning (www.merl.com/publications/docs/TR99-32.pdf) and various other applications. See . e.g.

(<http://robotics.eecs.berkeley.edu/~pister/publications/1999/Perng%20Acceleration%20Sensing%20Glove.pdf>).

¹³ See e.g. Boeing Workshop on Wearable Computer Systems: August 19-21, 1996, Renton, WA (session on applications, available at <http://www.cs.cmu.edu/afs/cs.cmu.edu/project/vuman/www/boeing/apps.html> and discussing health, fitness, patient monitoring, combat, virtual reality gaming and various other applications for wearable computers); CHI'97 Workshop on Research Issues in Wearable Computers: March 23-24, Atlanta, GA; Second International Workshop on Augmented Reality: October 20-21, 1999 in San Francisco. In support of their arguments Defendant may also rely on one or more of the conferences and/or papers published therein on the following list:

<http://libra.msra.cn/RankList?entitytype=3&topDomainID=2&subDomainID=12&last=0&start=1&end=100>

¹⁴ E.g. the Human Interface Technology Laboratory at the University of Washington and the Wearable Computing Project at the MIT media lab.

Attached as Exhibit 47 is a chart identifying several combinations of prior art references that render the asserted claims of the patents-in-suit obvious. The combinations identified in Exhibit 47 are representative only and are not meant to imply that other prior art identified by NOA does not render the asserted claims obvious, either alone or in combination. For instance, numerous additional potential combinations are discussed below that, based on NOA's current understanding of the asserted patents and Plaintiff's infringement contentions, would be largely cumulative and/or duplicative of the representative combinations identified in Exhibit 47. The combinations identified in Exhibit 47 are based on our current understanding of the patents, the plaintiff's infringement contentions, and the likely claim constructions, and without the benefit of significant discovery in this case. NOA therefore reserves the right to amend and/or supplement its obviousness combinations as the litigation proceeds.

A. Fitness Monitoring Devices

A number of references disclosed in Section I *supra* relate to fitness and sports monitoring devices. One of ordinary skill in the art would have been motivated to combine any of the fitness monitor references with any other fitness monitor reference. Specifically, the G-Trax system (as described in Hutchings '960, Hutchings '963), Flentov, Richardson, Damen, Chateau, the Expressive Footwear system, the Verplaetse Article, and the Bouten references relate to fitness and sports monitoring. The G-Trax system includes a device that measures the distance traveled, speed or height jumped of a person while running or walking. Flentov is directed to the similar goal of measuring the loft time and speed of a vehicle relative to the ground that may be used in tracking performance in sporting activities such as skiing and mountain biking. Chateau discloses an athletic monitoring device that measures motion parameters for improving athletic performance. Richardson similarly discloses a personal fitness monitoring device that tracks distance traveled, but also provides data regarding an individual's

fitness based in part upon a heart rate monitor. Similar to Richardson, Damen discloses a system that provides data on speed and distance, as well as fitness related data based on heart rate, and calories burned. Likewise, it was known that the Expressive Footwear system could be advantageously used in athletic footwear applications and for monitoring athletic activities to address preventative sports injuries. *See* Hu Thesis at 13. Likewise, the Verplaetse Article discloses systems, apparatuses, and methods for tracking athletic activity using accelerometer-based sensing technology. *See, e.g.*, Verplaetse Article at 642-43 (disclosing an inertial-sensor based shoe for tracking “speed and distance traveled” and proprioceptive baseball bats and tennis rackets for tracking a player’s swing characteristics).

All of these references provide similar benefits to individuals seeking to track their fitness/sports goals and activities. Because these references serve primarily the same function, one of ordinary skill in the art would have been motivated to combine such references to achieve greater benefits related to tracking distance traveled, speed and height jumped, and aerobic health. Indeed, U.S. Patent No. 5,724,265 to Hutchings, a patent related to the Hutchings ’960 and Hutchings ’963 patents that describe the G-Trax system, was cited during prosecution of the Damen patent; the cross-referencing of these references would have led a person of ordinary skill in the art to make use of the teachings of the cross-referenced references. *See KSR*, 550 U.S. at 417.

Similarly, the Bouten references all relate to tracking energy expenditure using an accelerometer. The Bouten references all relate to substantially the same system and it would have been obvious to one of ordinary skill in the art to look at different references authored by the same individual and to combine elements in a specific reference with elements described in another reference.

One of ordinary skill in the art would have been motivated to combine the technology described in references such as the G-Trax system (as described in Hutchings '960 and Hutchings '963), Flentov, Richardson, Damen, Chateau, the Verplaetse Article, and the Expressive Footwear system with the technology disclosed in the Bouten references to achieve an improved fitness monitor. As Hutchings '960 and Hutchings '963 recognizes, "in recent years many individuals have turned to their own fitness program of regular jogging." Hutchings '960 at 1:26-27; Hutchings '963 at 1:21-22; *see also* Damen at 1:15-17. As explained in Hutchings '960, Hutchings '963, and Damen one of the benefits of jogging is impact on weight loss. *See* Hutchings '960 at 1:33; Hutchings '963 at 1:29; Damen '1:18-21. The amount of energy expenditure, as tracked in the Bouten references, is directly tied to weight loss. Individuals engaged in jogging, or other fitness activities, as part of a weight loss program would be interested in combining the ability to track statistics regarding the nature and quality of their jogging with data on the amount of calories burned and accordingly one of ordinary skill in the art would have been motivated to combine these references. Further evidencing its motivation to combine, the system described in Damen generates data related to calories burned. Because the Bouten references, and the other above-referenced fitness monitoring references, all relate to methods and systems of monitoring fitness-related goals/activity, one of ordinary skill in the art would have been motivated to combine the teachings of these various references.

B. Fall Monitors

The Cameron, Depeursinge, Yashusi, Shoji and Jacobson references all relate to fall monitors and, more specifically, to fall monitors worn by a human subject. The Okuno reference, which more broadly teaches position monitoring, has a primary embodiment that detects falling. Likewise, the Unuma reference, although primarily related to classifying motion, has embodiments that specifically relate to fall monitoring. *See, e.g.*, Unuma at 30. One of

ordinary skill in the art would have been motivated to combine any of the human subject fall monitor references with any other human subject fall monitor reference because the references were all directed to the same objective: detecting and monitoring hazardous movements of a person. Because these references are directed to the same goal, one of ordinary skill in the art would have been motivated to combine such references to achieve greater benefits related to detecting a fall. Similarly, the Tennes Reference discloses an “impact detection apparatus” which relates to monitoring the motion of items during shipment and, like the fall monitors disclosed in Cameron, Depeursinge, Akiba, Jacobson, Okuno and Unuma, detects potentially hazardous motion using accelerometer data. Due to the similarity of detecting hazardous movements (falls) in humans and detecting hazardous movement of goods during shipment, one of ordinary skill in the art would have combined the teachings of Tennes with the technology disclosed in the human subject fall monitor references. Indeed, the asserted ’481 patent recognizes that technology used to monitor hazardous motion of a human (a fall) could be equally applicable to analyzing hazardous motion of an inorganic object, such as commercial items during shipment. *See* ’481 Patent at 2:2-6; 2:43-47.

C. Ambulatory Monitors

Krausman, the three Veltink references, the two Bussmann references, Fahrenberg, Unuma, Hubert, Takahide, Hiroshi, Takahashi and the Veltink system (as described by Veltink and Bussman) disclose methods of determining whether movement occurs and/or classifying a type of movement. One of ordinary skill in the art would have been motivated to combine any of these ambulatory monitor references with any other ambulatory monitor reference because they were directed to the same objective, *i.e.*, the use of the use of accelerometer-based technology to monitor patient movement, often in clinical and rehabilitative settings. *See, e.g.*, Krausman at 1:10-14, 1:56-2:14; Veltink 1993 Article at 1230; Veltink 1995 Article at 1303; Veltink 1996

Article at 375; Bussmann Dissertation at 2; Bussmann Article at 153; Unuma at 14; Hubert at 1:5-9; Takahide at Abstract; Hiroshi at [0014]; Takahashi at Abstract. Because these references all relate monitoring ambulatory activity, one of ordinary skill in the art would have been motivated to combine the teachings of each of these references. Notably, many of these references have overlapping authorship and/or cross-reference one another, which further demonstrate that one of ordinary skill in the art would be likely to view these references together and combine the teachings of each. *See, e.g.*, Veltink 1996 Article (authored by Veltink and Bussmann, among others); Bussmann Dissertation at 201 (citing Bussmann Article); Fahrenberg at 612 (citing Veltink). In addition, the Hubert reference is cited on the face of the '481 and '939 patents.

D. Cardiac Pacemakers

Several references disclosed in Section I *supra* relate to cardiac pacemakers. Specifically Sheldon '297, Sheldon '431 and Sheldon '562 references (and the Medtronic system described thereby) fall into this category. One of ordinary skill in the art would have been motivated to combine any of the cardiac pacemaker references with any other cardiac pacemaker reference. All of these references relate to sensing the position and motion of a body and using that data in medical monitoring and/or the delivery of device assisted therapies such as cardiac pacing, drug delivery by an implantable medical device. *See, e.g.*, Sheldon '297 at 1:6-16; Sheldon '562 at 4:29-39; Sheldon '431 at 4:17-29. Because these references serve primarily the same function, one of ordinary skill in the art would have been motivated to combine such references to achieve greater benefits related to monitoring movement and position in order to control the delivery of device assisted therapies. Moreover, the Sheldon references were all invented by the same

inventor, Todd Sheldon,¹⁵ and the later-filed Sheldon '297 reference expressly cross-references the two earlier-filed patents. *See* Sheldon '297 (citing both the Sheldon '431 and Sheldon '562 references as prior art). Additionally, the Sheldon '562 patent references the Sheldon '431 patent in its specification and vice versa.¹⁶ Given the overlapping inventorship and cross-referencing within these three pieces of prior art, one of ordinary skill in the art would have been motivated to combine these references.

E. Position Tracking

A number of references disclosed in Section I *supra* relate to position tracking using accelerometers. One of ordinary skill in the art would have been motivated to combine any of the position tracking references with any other position tracking reference because each of the references was directed to the same objective. Specifically, the Verplaetse Thesis, the Crossbow System (as described in Horton '206 and Horton '132, among other sources), Kozah, Okuno, Matsushima, Yee and Shima all relate to tracking the position of or controlling an object or individual using accelerometer-based technology. In particular, the Verplaetse Thesis is directed to a system for tracking the position and motion of a video camera using accelerometer-based inertial sensors, among other related systems. *See, e.g.*, Verplaetse Thesis at 1, 17. Similarly, the Crossbow System is directed to three dimensional position and orientation tracking (of, for example, a head-mounted virtual reality display) using accelerometers. Likewise, Kozah describes an apparatus and method for tracking the orientation and position of an object using accelerometers (*See* Kozah (Abstract)) and Okuno discloses a GPS tracking system that incorporates acceleration sensors for detecting falls and other emergency situations. *See* Okuno

¹⁵ The Sheldon '297 patent was also invented by three other co-inventors.

¹⁶ More specifically, the Sheldon '431 patent references the application from which the Sheldon '562 patent is a continuation-in-part.

[0005]. In the same vein, Matsushima discloses systems and methods for determining position (for example, as reflected by spatial coordinates) using accelerometers. *See* Matsushima (Abstract). The Yee and Shima patents similarly disclose systems and methods for controlling operation of an electronic device using acceleration data. *See* Yee (Abstract), Shima (Abstract).

All of these references providing similar benefits to individuals seeking to accomplish position tracking using accelerometer-based data. Because these references serve primarily the same function, one of ordinary skill in the art would have been motivated to combine such references to achieve greater benefits related to track the position of an object or individual using accelerometer-based data. Additionally, because both the Verplaetse Thesis and Matsushima disclose tracking the position of an input device, such as a pen, using accelerometer information, a skilled artisan would have been motivated to combine the teachings of the Verplaetse Thesis and Matsushima to achieve an improved accelerometer-based position tracking. *See, e.g.*, Verplaetse Thesis at 67-68; Matsushima at 2:1-9. Likewise, because both the Verplaetse Thesis and the Crossbow system disclose accelerometer-based head trackers for virtual reality, a skilled artisan would have been motivated to combine the teachings of the Verplaetse Thesis and the Crossbow system to achieve an improved accelerometer-based position tracking. *See, e.g.*, Verplaetse Thesis at 67-68; Horton '206 (Abstract).

F. Motivations to Combine Fitness Monitoring Devices with Fall Monitors

One of ordinary skill in the art would be motivated to combine any of the fall monitor references with any of the fitness monitor references. Monitoring athletic movement and falling movements are highly related applications – both of them relate to using a common technology (accelerometers) to detect and interpret rapidly changing human motion. Indeed, in many athletic devices (including the G-Trax system, the Expressive Footwear system, and those disclosed in Richardson, Chateau and the Verplaetse Article), the sensor means would have

needed to be able to detect and understand an athlete's fall (or the fall of the athlete's foot) so as to properly interpret his or her performance. Thus, a person of ordinary skill in the art would have recognized that the teachings in fall monitor references on understanding accelerometer readings would have been relevant to interpreting data from accelerometers strapped to athletes, and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. *See KSR*, 550 U.S. at 417.

Additionally, fall monitors and fitness monitors both relate to the health and fitness fields, which are closely analogous. The strong connection between health and fitness is well understood. Additionally, because of the close connection of these two fields one of ordinary skill in the art would understand that similar technology may be beneficial in both fields. For example, both fall monitor references and fitness monitor references discuss combining a motion sensor with a heart monitor. *Compare* Jacobson at 9:9-29 *with* Richardson at Abstract, Akiba at Abstract and Damen at Abstract. Due to the close relationship between these two fields, one of ordinary skill in the art would have been motivated to combine advances in fitness monitoring with advances in the medical-related motion sensing technology, such as fall monitoring.

G. Motivations to Combine Fitness Monitoring Devices with Ambulatory Monitors

One of ordinary skill in the art would be motivated to combine any of the fitness monitor references with any of the ambulatory monitor references. Monitoring athletic movement and the ambulatory movement of medical patients are highly related applications – both relate to using a common technology (accelerometers) to detect and interpret human motion. Indeed, in many athletic devices (including the G-Trax system and those disclosed in the Verplaetse Article), the device would have needed to be able to detect and understand particular aspects of the user's gait, as is done in the ambulatory sciences, so as to properly interpret his or her

performance. One of ordinary skill in the art would have recognized that the accelerometer-based means for monitoring the movement of an individual in the fitness monitor field would likely be useful for monitoring like movements in the ambulatory monitor fields and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. *See KSR*, 550 U.S. at 417. Indeed, the Verplaetse article recognizes the connection between fitness monitors and ambulatory monitors: “[t]he medical and athletic fields have relied on various forms of externally referenced walking rate and distance sensors for some time. *See Verplaetse Article* at 642. Verplaetse additionally suggested the use of similar sensors in fitness applications, including a “shoe system could not only tell its wearer how fast he or she is walking, but could also diagnose gait abnormalities” *Id.*

Moreover, both fitness monitors and ambulatory monitors primarily relate to the health and fitness fields, which are closely analogous. As noted above the strong connection between health and fitness is well-understood. One of ordinary skill in the art would have been motivated to combine advances in fitness monitoring with advances in the medical-related motion sensing technology, such as ambulatory monitoring. For example, one of ordinary skill in the art would recognize the need to combine the energy-expenditure-related technology in the Bouten references and Damen reference with the technology disclosed in the ambulatory references related to categorizing types of activities because there would be a need to determine calories expended during different types of activities.

H. Motivations to Combine Fitness Monitoring Devices with Cardiac Pacemakers

One of ordinary skill in the art would be motivated to combine any of the fitness monitor references with any of the cardiac pacemaker references. Monitoring athletic movement and the physical movements and activity of a cardiac pacemaker user are highly related applications –

both of them relate to using a common technology (accelerometers) to detect and interpret rapidly changing human motion, including information relating to the user's orientation. Indeed, both fitness monitors and cardiac pacemakers use very similar techniques to derive a user's activity, motion, and orientation using accelerometer data. *See, e.g.*, Shelton '562 at 12:21-44 (measuring the shockwaves of a patient's footfalls using accelerometer data from a cardiac pacemaker to determine activity levels and whether a patient is walking or running); Richardson, Fig. 13b (disclosing the detection of footfalls for determining a user's physical activity). Thus, a person of ordinary skill in the art would have recognized that the teachings in cardiac pacemaker references on using and interpreting accelerometer readings would have been relevant to interpreting data from accelerometers strapped to athletes, and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. *See KSR*, 550 U.S. at 417.

Moreover, both cardiac pacemakers and fitness monitors relate to the health and fitness fields, which are closely analogous. As noted above the strong connection between health and fitness is well understood. Notably, both the cardiac pacemaker references and the fitness monitor references combine motion sensing technology with heart-related technology. For example, Richardson incorporates a heart rate monitor that determines and output data representing the heart rate of the individual. Damon similarly teaches combining a fitness monitor with a heart rate monitor. Recognizing the similarity of these two applications in the medical and health-related fields, one of ordinary skill in the art would have been motivated to combine advances in health-related fitness monitoring with advances in the medical-related cardiac pacemakers.

I. Motivations to Combine Fitness Monitoring Devices with Position Tracking Systems

One of ordinary skill in the art would be motivated to combine any of the fitness monitor references with the category of position tracking references. Monitoring athletic movement and tracking the position of objects/individuals are highly related applications – both of them relate to using a common technology (accelerometers) to detect and interpret rapidly changing motion, such as the movements of an athlete or the motion of a user’s virtual reality headgear. Indeed, in many fitness monitoring systems (including the G-Trax system), the fitness monitor would have needed to track the athlete’s position to properly interpret his or her performance. Thus, a person of ordinary skill in the art would have recognized that the teachings in position tracking references on understanding accelerometer readings would have been relevant to interpreting data from accelerometers strapped to athletes, and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. See KSR, 550 U.S. at 417.

Indeed, the Verplaetse Thesis recognizes the connection between fitness monitors and position tracking systems and describes using the same underlying accelerometer-based sensing in both applications. *See, e.g.*, Verplaetse Thesis at 69-70 (describing a shoe pedometer system using acceleration data); Verplaetse Thesis at (deriving position and orientation of a camera using accelerometer data). Additionally, Mr. Verplaetse has described elsewhere systems, apparatuses, and methods for tracking athletic activity using accelerometer-based sensing technology. *See, e.g.*, Verplaetse Article at 642-43 (disclosing an inertial-sensor based shoe for tracking “speed and distance traveled” and proprioceptive baseball bats and tennis rackets for tracking a player’s swing characteristics). Indeed, Mr. Verplaetse’s thesis directed to a position

tracking camera system cites the Verplaetse Article describing athletic activity tracking systems. *See* Verplaetse Thesis at 109.

J. Motivations to Combine Fall Monitors with Ambulatory Monitors

One of ordinary skill in the art would be motivated to combine any of the fall monitor references with any of the ambulatory monitor references. Monitoring ambulatory movements and falling movements are highly related applications – both of them relate to using a common technology (accelerometers) to detect and interpret rapidly changing and often unpredictable human movement. Indeed, it was well known that ambulatory monitoring devices could detect a patient's activity by measuring, among other characteristics, a patient's footfall so as to properly interpret his or her movement. *See, e.g.,* Bussmann Thesis at 7, 32, 65. Moreover, some ambulatory monitoring systems (including Unuma) incorporated fall detectors, demonstrating that those skilled in the art were motivated to, and did, in fact, combine the teachings of the ambulatory monitor field with those from the fall monitor field. *See, e.g.,* Unuma at 16, 36. Thus, a person of ordinary skill in the art would have recognized that the teachings in fall monitor references on understanding accelerometer readings would have been relevant to interpreting data from accelerometers strapped to ambulatory monitoring subjects, and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. *See KSR*, 550 U.S. at 417.

Additionally, both fall monitors and ambulatory monitors are used in medical applications, which provide additional motivation to combine. Moreover, both the ambulatory monitor references and fall monitor references relate to characterizing a type of motion in patients. Ambulatory monitor references discuss the benefits of monitoring patient movement at home to assist in rehabilitation treatment. *See, e.g.,* Veltink 1996 Article at 375. The fall monitor references similarly relate to monitoring patient movement at home. *See, e.g.,* Jacobsen

at 2:10-20. One of ordinary skill in the art would likely be aware of advances in motion sensing technology in a variety of medical-related applications and learn from the teachings of all these applications. Accordingly, one of ordinary skill in the art would be motivated to combine advances in the fall monitor field with advances in the closely related fields of ambulatory monitors.

K. Motivations to Combine Fall Monitors with Cardiac Pacemakers

One of ordinary skill in the art would be motivated to combine any of the fall monitor references with any of the cardiac pacemaker references. Monitoring the activities of a cardiac pacemaker user and falling movements are highly related applications – both of them relate to using a common technology (accelerometers) to detect and interpret rapidly changing and often unpredictable human movement in a clinical or rehabilitative setting. Additionally, both fall monitors and cardiac pacemakers are in the medical field. This fact provides an additional motivation to combine. One of ordinary skill in the art would have been aware of other advances in motion sensing technology in both of these medical-related applications and learn from the teachings of both. Moreover, both fall monitor references and cardiac pacemaker references combine motion sensing technology with heart-related technology making the connection between these two types of references even more obvious. *Compare* Sheldon References (and the Medtronic system described thereby) *with* Jacobson at 9:9-29. This would have led a person of ordinary skill in the art to make use of the teachings of those both the fall monitor references and the cardiac pacemaker references. *See KSR*, 550 U.S. at 417.

L. Motivations to Combine Fall Monitors with the Position Tracking Systems

One of ordinary skill in the art would be motivated to combine any of the fall monitor references with any of the position tracking systems. Monitoring falling movements and tracking the position of objects/individuals are highly related applications – both of them relate

to using a common technology (accelerometers) to detect and interpret rapidly changing motion. Indeed, several position tracking references (including the Verplaetse Thesis) recognize the utility of employing motion sensing technology in a wide array of fields, including the in medical-oriented fields. *See* Verplaetse Thesis at 18, 65, 69. Fall detection is one such medical application. Thus, a person of ordinary skill in the art would have recognized that the teachings in position tracking references on understanding accelerometer readings would have been relevant to interpreting data from accelerometers embedded in fall monitors, and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. *See KSR*, 550 U.S. at 417.

M. Motivations to Combine Ambulatory Monitors with Cardiac Pacemakers

One of ordinary skill in the art would be motivated to combine any of the ambulatory monitor references with any of the cardiac pacemaker references. Monitoring the activities of a cardiac pacemaker user and ambulatory movements are highly related applications – both of them relate to using a common technology (accelerometers) to detect and interpret rapidly changing and often unpredictable human movement in a clinical or rehabilitative setting. Indeed, in many cardiac pacemaker systems (including the Sheldon references) the cardiac pacemakers would have needed to be able to detect and categorize different types of activities, which is a chief objective of the ambulatory monitoring field. Thus, a person of ordinary skill in the art would have recognized that the teachings in ambulatory monitoring references on interpreting accelerometer readings would have been relevant to interpreting data from accelerometers in pacemakers, and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. *See KSR*, 550 U.S. at 417.

Additionally, both cardiac pacemakers and ambulatory monitors are used in medical applications, which provide additional motivation to combine. Moreover, both the ambulatory

monitor references and the cardiac pacemaker references relate to characterizing a type of motion in patients. The ambulatory monitor references discuss the benefits of monitoring patient movement at home to assist in rehabilitation treatment. *See, e.g.*, Veltink 1996 Article at 375. The cardiac pacemaker references similarly relate to monitoring patient activity in a rehabilitative setting, *i.e.*, following implantation of a pacemaker following cardiac surgery. One of ordinary skill in the art would likely be aware of advances in motion sensing technology in a variety of medical-related applications and learn from the teachings of all these applications. Accordingly, one of ordinary skill in the art would be motivated to combine advances in the cardiac pacemaker field with advances in the closely related field of ambulatory monitors.

N. Motivations to Combine Ambulatory Monitors with Position Tracking Systems

One of ordinary skill in the art would be motivated to combine any of the ambulatory monitor references with any of the position tracking systems. Monitoring ambulatory movements and tracking the position of objects/individuals are highly related applications – both of them relate to using a common technology (accelerometers) to detect and interpret rapidly changing motion. Indeed, several position tracking references (including the Verplaetse Thesis) recognize the utility of employing motion sensing technology in a wide array of fields, including the in medical-oriented fields. *See* Verplaetse Thesis at 18, 65, 69. Moreover, some ambulatory monitoring systems (including Unuma) incorporated position tracking, demonstrating that those skilled in the art were motivated to, and did, in fact, combine the teachings of the ambulatory monitor field with those from the position tracking field. *See, e.g.*, Unuma at 3, 4, 11-12, fig. 10. Ambulatory monitoring is one such medical application. Thus, a person of ordinary skill in the art would have recognized that the teachings in position tracking references on understanding accelerometer readings would have been relevant to interpreting data from accelerometers

embedded in ambulatory monitors, and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. *See KSR*, 550 U.S. at 417.

O. Motivations to Combine Cardiac Pacemakers with Position Tracking Systems

One of ordinary skill in the art would be motivated to combine any of the cardiac pacemaker references with any of the position tracking systems. Monitoring the accelerative activities of a cardiac pacemaker user and tracking the position of objects/individuals are highly related applications – both of them relate to using a common technology (accelerometers) to detect and interpret rapidly changing motion. Indeed, several position tracking references (including the Verplaetse Thesis) recognize the utility of employing motion sensing technology in a wide array of fields, including the in medical-oriented fields. *See Verplaetse Article* at 642-43. Cardiac pacemakers are one such medical application. Thus, a person of ordinary skill in the art would have recognized that the teachings in position tracking references on understanding accelerometer readings would have been relevant to interpreting data from accelerometers embedded in cardiac pacemakers, and vice versa. This would have led a person of ordinary skill in the art to make use of the teachings of both sets of references. *See KSR*, 550 U.S. at 417.

III. GROUNDS OF INVALIDITY BASED ON 35 U.S.C. § 112 ¶ 2 (P.L.R 3.3(d))

The Federal Circuit has explained that the second paragraph of § 112 contains two requirements: “first, [the claim] must set forth what ‘the applicant regards as his invention,’ and second, it must do so with sufficient particularity and distinctness, i.e., the claim must be sufficiently ‘definite.’” *Allen Eng’g Corp. v. Bartell Indus.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002) (quoting *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1377 (Fed. Cir. 2000)). “Where it is apparent to one of skill in the art, based on the specification, that the invention set forth in a claim is not what the patentee regarded as his invention [the Court] must hold that

claim invalid under § 112, paragraph 2.” *Id.* at 1348; *see also JuxtaComm-Tex. Software, LLC v. Tibco Software, Inc.*, 532 Fed. Appx. 911 (Fed. Cir. Sept. 30, 2013).

With respect to the requirement that claims set forth “what the patentee regarded as his invention,” the asserted patents include multiple claims that must be found invalid under 35 U.S.C. § 112(2) because they purport to set forth an invention that is not what the patentee regarded his invention to be. Specifically, although Plaintiff’s infringement contentions stretch the claims to reach motion controlled gaming applications, it would have been apparent to one of skill in the art, based on the specification, that the purported inventions set forth in the asserted claims (as Plaintiff appears to interpret them based its infringement contentions) is not what the patentee regarded as his invention. Indeed, nowhere in the specification does the patentee purport to have invented any methods or systems related to using accelerometers for electronic gaming; on the contrary, it would have been apparent to one of skill in the art, based on the specification, that the patentee regarded as his invention a human fall monitor/detector.

As noted above, Section 112 also includes a definiteness requirement. *See* 35 U.S.C. § 112(2) (“[T]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”). “A patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (U.S. 2014). The following are grounds of invalidity based on indefiniteness under 35 U.S.C. § 112(2) of certain asserted claims:

A. “Accelerative Event Characteristic”

At least claims 1, 3, and 21 of the ’481 Patent; claims 1 and 21 of the ’939 Patent; claims 1 and 10 of the ’796 Patent; claims 1 and 11 of the ’331 Patent; claims 1, 21, 41, and 62 of the

'461 Patent; and claims 1 and 11 of the '890 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “accelerative event characteristic” with reasonable certainty. A skilled artisan would not be able to determine what constitutes an accelerative event characteristic and therefore would be unable to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph. Likewise, related terms such as “said at least one accelerative event characteristic is representative mathematically of at least part of said environment” are also insolubly ambiguous and, thus, invalid because one of skill in the art would be unable to interpret them.

B. “Environmental Tolerance”

At least claims 1, 20, and 21 of the '481 Patent; claims 1 and 21 of the '939 Patent; claims 1 and 10 of the '796 Patent; claims 1 and 11 of the '331 Patent; claims 1, 21, 41, 61, and 62 of the '461 Patent; and claims 1 and 11 of the '890 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “environmental tolerance” with reasonable certainty. A skilled artisan would not be able to determine what constitutes an environmental tolerance or when a determination with respect to an environmental tolerance is made. Moreover, it is also ambiguous what “environment” is referred to and what relationship between the “environment” and the “tolerance” is required. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

C. “Repeatedly Sensed”

At least claim 21 of the '481 Patent; claim 21 of the '939 Patent; claim 11 of the '331 Patent; and claims 21 and 62 of the '461 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “repeatedly sensed” with reasonable certainty. A skilled artisan would not be able to determine the frequency with

which phenomena must be sensed in order to be “repeatedly sensed.” In other words, it is ambiguous whether two or more sensing occurrences constitute “repeatedly sensed” if the occurrences take place any arbitrary amount of time apart. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

D. “Substantially Continually Measuring”

At least claim 11 of the ’890 Patent is invalid because one of skill in the art would be unable to interpret the term “substantially continually measuring” or “substantially continuously measuring”, respectively, with reasonable certainty. A skilled artisan would not be able to tell the extent to which the claimed measuring may be discontinuous yet still qualify as “substantially continually.” Moreover, the very notion of “substantially continually” implies that the activity is, in part, discontinuous, which conflicts with the notion of a continuous activity. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

E. “No Motion”

At least claims 2 and 22 of the ’939 Patent; and claims 2, and 12, of the ’331 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “no motion” with reasonable certainty. A skilled artisan would not be able to tell when a lack of motion constitutes “no motion”. For example, the claim term does not make clear how long something must be without motion to qualify as having “no motion”. Moreover, the claim term does not make clear whether an insubstantial amount of motion is permitted or if the object must be absolutely still. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

F. “A Successful Attempt to Change Position”

At least claims 2 and 22 of the '939 Patent; and claims 2 and 12 of the '331 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “a successful attempt to change position” with reasonable certainty. A skilled artisan would not be able to tell what activity constitutes “a successful attempt to change position”. It is ambiguous whether a “position” is any physical location and thus any and all movement is a change in “position” for purposes of this term or if a “position” is a predefined orientation, attitude, or posture. It is also ambiguous what makes an attempt to change position “successful”. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

G. “An Unsuccessful Attempt to Change Position”

At least claims 2 and 22 of the '939 Patent; and claims 2, and 12 of the '331 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “an unsuccessful attempt to change position” with reasonable certainty. A skilled artisan would not be able to tell what activity constitutes “an unsuccessful attempt to change position”. As discussed above, it is ambiguous whether any and all movement is a change in position for purposes of the claim term or if only movement that results in a specific final position qualifies. It is also ambiguous what makes an attempt “unsuccessful” and, thus, what distinguished a “successful attempt” from an “unsuccessful attempt”. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

H. “Gait with Disability”

At least claims 2 and 22 of the '939 Patent; and claims 2, and 12 of the '331 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to

interpret the term “a motion of a body moving with a gait associated with a disability” with reasonable certainty. A skilled artisan would not be able to tell what motion constitutes “a motion of a body moving with a gait associated with a disability” at least because the claims do not make clear what qualifies as a “disability”. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

I. “A Swaying Motion”

At least claims 2 and 22 of the '939 Patent; and claims 2, and 12, of the '331 Patent (and any claims that depend therefrom) are insolubly ambiguous and, thus, invalid because one of skill in the art would be unable to interpret the term “a swaying motion”. A skilled artisan would not be able to tell what motion constitutes “a swaying motion”. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

J. “A Near Fall”

At least claims 2 and 22 of the '939 Patent; and claims 2, and 12 of the '331 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “a near fall” with reasonable certainty. A skilled artisan would not be able to tell what motion constitutes “a near fall”. It is ambiguous whether the term “fall” encompasses any drop in altitude or whether it requires other elements. Moreover, it is also ambiguous what qualifies a motion as a “near” fall, particularly if “fall” is determined to encompass any drop in altitude. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

K. “A Fall”

At least claims 2 and 22 of the '939 Patent; and claims 2, and 12 of the '331 Patent (and

any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “a fall” with reasonable certainty. A skilled artisan would not be able to tell what motion constitutes “a fall”. As discussed above, it is ambiguous whether the term “fall” encompasses any drop in altitude or whether it requires other elements. In addition, as the claims recite both “a near fall” and “a fall”, it is ambiguous what distinguishes the two terms. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

L. “Total Acceleration”

At least claims 41 and 62 of the ’461 Patent (and any claims that depend therefrom) are insolubly ambiguous and, thus, invalid because one of skill in the art would be unable to interpret the term “total acceleration”. A skilled artisan would not be able to tell what types of acceleration is included in the “total acceleration”. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

M. “No Movement”

At least claims 1 and 11 of the ’890 Patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “no movement” with reasonable certainty. A skilled artisan would not be able to tell when a lack of motion constitutes “no movement”, at least because the claim term does not make clear whether an insubstantial amount of movement is permitted, whether the amount of movement must be less than a detectable threshold, or whether the object must be absolutely still. Accordingly, one of ordinary skill in the art would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph.

N. “Relative to a Three Dimensional Frame of Reference”

At least claims 1 of the '939 Patent, claims 1 and 11 of the '331 Patent, claims 2, 22, and 41 of the '461 Patent, and claims 1 and 11 of the '890 patent (and any claims that depend therefrom) are invalid because one of skill in the art would be unable to interpret the term “relative to a three dimensional frame of reference” with reasonable certainty. A skilled artisan would not be able to determine what is meant by “relative to a three dimensional frame of reference” and therefore would not be able to determine the metes and bounds of the claims as required by 35 U.S.C. § 112, second paragraph. Likewise, the related term “with respect to said three dimensional frame of reference” recited in claims 2, 3, 12, and 13 of the '890 patent is also ambiguous and, thus, invalid because one of skill in the art would be unable to interpret it.

Indefiniteness Due To IPXL Holdings Hybrid Claiming**O. '481 Patent:**

Claims 1 and 21 of the '481 patent (and any claims that depend therefrom) are invalid as indefinite under 35 U.S.C. § 112 because they attempt to claim both a system and a method for using that system. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed. Cir. 2005) (affirming summary judgment grant of invalidity under 35 U.S.C. § 112 against combined system/method claim.) There, the Court held:

as a result of the combination of two separate statutory classes of invention, a manufacturer or seller of the claimed apparatus would not know from the claim whether it might also be liable for contributory infringement because a buyer or user of the apparatus later performs the claimed method of using the apparatus. Thus, such a claim is not sufficiently precise to provide competitors with an accurate determination of the metes and bounds of protection involved and is ambiguous and properly rejected under section 112, paragraph 2.

Claim 1 is such an impermissible mixed system and method claim. For example, despite claiming an apparatus, claim 1 recites several process steps including “senses dynamic and static accelerative phenomena of said body” and “that processes sensed dynamic and static accelerative

phenomena as a function of at least one accelerative event characteristic to thereby determine whether evaluated body movement is within environmental tolerance.”

Claim 21 is also such an impermissible mixed system and method claim. For example, it is a method claim that recites “method of operating a system to evaluate movement of a body.” It also, however, recites the elements of a system: “a sensor” and “a processor.”

P. '939 Patent:

Claims 1 and 21 of the '939 patent (and any claims that depend therefrom) are invalid as indefinite under 35 U.S.C. § 112 because they attempt to claim both a system and a method for using that system. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed. Cir. 2005) (affirming summary judgment grant of invalidity under 35 U.S.C. § 112 against combined system/method claim.) There, the Court held:

as a result of the combination of two separate statutory classes of invention, a manufacturer or seller of the claimed apparatus would not know from the claim whether it might also be liable for contributory infringement because a buyer or user of the apparatus later performs the claimed method of using the apparatus. Thus, such a claim is not sufficiently precise to provide competitors with an accurate determination of the metes and bounds of protection involved and is ambiguous and properly rejected under section 112, paragraph 2.

Claim 1 is such an impermissible mixed system and method claim. For example, despite claiming an apparatus, claim 1 recites several process steps including “senses accelerative phenomena of said body” and “that processes said sensed accelerative phenomena of said body as a function of at least one accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance, and to thereby determine whether said body has experienced acceleration that represents one of a plurality of different types of motion.”

Claim 21 is such an impermissible mixed system and method claim. For example, it is a method claim that recites “method of operating a system to evaluate movement of a body.” It

also, however, recites the elements of a system: “a sensor” and “a processor.”

Q. '796 Patent:

Claims 1 and 10 of the '796 patent (and any claims that depend therefrom) are invalid as indefinite under 35 U.S.C. § 112 because it attempts to claim both a system and a method for using that system. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed. Cir. 2005) (affirming summary judgment grant of invalidity under 35 U.S.C. § 112 against combined system/method claim.) There, the Court held:

as a result of the combination of two separate statutory classes of invention, a manufacturer or seller of the claimed apparatus would not know from the claim whether it might also be liable for contributory infringement because a buyer or user of the apparatus later performs the claimed method of using the apparatus. Thus, such a claim is not sufficiently precise to provide competitors with an accurate determination of the metes and bounds of protection involved and is ambiguous and properly rejected under section 112, paragraph 2.

Claim 1 is such an impermissible mixed system and method claim. For example, despite claiming an apparatus, claim 1 recites several process steps including “senses dynamic and static accelerative phenomena of said body” and “that processes said sensed dynamic and static accelerative phenomena as a function of at least one accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance.”

Claim 10 is such an impermissible mixed system and method claim. For example, it is a method claim that recites a “method for operating a system within a communications device.” It also, however, recites the elements of a system: “a sensor” and “a processor.”

R. '331 Patent:

Claims 1 and 11 of the '331 patent (and any claims that depend therefrom) are invalid as indefinite under 35 U.S.C. § 112 because it attempts to claim both a system and a method for using that system. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed. Cir. 2005) (affirming summary judgment grant of invalidity under 35 U.S.C. § 112 against

combined system/method claim.) There, the Court held:

as a result of the combination of two separate statutory classes of invention, a manufacturer or seller of the claimed apparatus would not know from the claim whether it might also be liable for contributory infringement because a buyer or user of the apparatus later performs the claimed method of using the apparatus. Thus, such a claim is not sufficiently precise to provide competitors with an accurate determination of the metes and bounds of protection involved and is ambiguous and properly rejected under section 112, paragraph 2.

Claim 1 is such an impermissible mixed system and method claim. For example, despite claiming an apparatus, claim 1 recites several process steps including “senses accelerative phenomena of said body” and “that processes said sensed accelerative phenomena of said body as a function of at least one accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance, and to thereby determine whether said body has experienced acceleration that represents one of a plurality of different types of motion.”

Claim 11 is such an impermissible mixed system and method claim. For example, it is a method claim that recites “method of operating a system to evaluate movement of a body.” It also, however, recites the elements of a system: “a sensor”, “a plurality of acceleration measuring devices” and “a processor.”

S. '461 Patent:

Claims 2, 21, 41 and 62 of the '461 patent (and any claims that depend therefrom) are invalid as indefinite under 35 U.S.C. § 112 because they attempt to claim both a system and a method for using that system. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed. Cir. 2005) (affirming summary judgment grant of invalidity under 35 U.S.C. § 112 against combined system/method claim.) There, the Court held:

as a result of the combination of two separate statutory classes of invention, a manufacturer or seller of the claimed apparatus would not know from the claim whether it might also be liable for contributory infringement because a buyer or user of the apparatus later performs the claimed method of using the apparatus.

Thus, such a claim is not sufficiently precise to provide competitors with an accurate determination of the metes and bounds of protection involved and is ambiguous and properly rejected under section 112, paragraph 2.

Claim 2 is such an impermissible mixed system and method claim. For example, despite claiming an apparatus, claim 2 recites the process step “determines whether said body has experienced acceleration that represents one of a plurality of different types of motion”

Claim 41 is such an impermissible mixed system and method claim. For example, despite claiming an apparatus, claim 41 recites several process steps including “senses accelerative phenomena of said body” and “that processes accelerative phenomena as a function of at least one accelerative event characteristic to thereby determine whether evaluated body movement is within environmental tolerance, and to thereby determine whether said body has experienced dynamic acceleration due to external forces by subtracting a value of gravitational acceleration from the total acceleration experienced by said body.”

Claims 21 and 62 are such impermissible mixed system and method claims. For example, claims 21 and 62 are method claims that recite “method of operating a system to evaluate movement of a body.” However, claims 21 and 62 also recite the elements of a system: “a sensor” and “a processor.”

T. '890 Patent:

Claims 1 and 11 of the '890 patent (and any claims that depend therefrom) are invalid as indefinite under 35 U.S.C. § 112 because they attempt to claim both a system and a method for using that system. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1383–84 (Fed. Cir. 2005) (affirming summary judgment grant of invalidity under 35 U.S.C. § 112 against combined system/method claim.) There, the Court held:

as a result of the combination of two separate statutory classes of invention, a manufacturer or seller of the claimed apparatus would not know from the claim whether it might also be liable for contributory infringement because a buyer or user of the apparatus later performs the claimed method of using the apparatus.

Thus, such a claim is not sufficiently precise to provide competitors with an accurate determination of the metes and bounds of protection involved and is ambiguous and properly rejected under section 112, paragraph 2.

Claim 1 is such an impermissible mixed system and method claim. For example, despite claiming an apparatus, claim 1 recites several process steps including “senses accelerative phenomena of said body” and “that processes said sensed accelerative phenomena of said body as a function of at least one accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance, and to thereby determine whether said body has experienced no movement for a predetermined period of time.”

Claim 11 is such an impermissible mixed system and method claim. For example, it is a method claim that recites “method of operating a system to evaluate movement of a body.” It also, however, recites the elements of a system: “a sensor” and “a plurality of acceleration measuring devices.”

IV. GROUNDS OF INVALIDITY BASED ON LACK OF WRITTEN DESCRIPTION, LACK OF ENABLING DISCLOSURES (P.L.R 3.3(e))

35 U.S.C. § 112 further includes a written description requirement. *See* 35 U.S.C. § 112(1) (“The specification shall contain a written description of the invention”). To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention at the time of filing the patent application. *See generally Ariad Pharm., Inc. v. Eli Lilly and Co.*, 598 F. 3d 1336 (Fed. Cir. 2010) (en banc).

35 U.S.C. § 112 further includes an enablement requirement. *See* 35 U.S.C. § 112(1). To satisfy the enablement requirement, a patent specification must describe the claimed invention in sufficient detail to enable the full scope of the claims as alleged by Plaintiff and to teach one skilled in the art how to make and use the full scope of the alleged invention as required by §

112.

Numerous claims of the asserted patents are invalid based on lack of written description or lack of enabling disclosure under 35 U.S.C. § 112(1), including at least the following:

A. “Evaluating Movement of a Body Relative to an Environment”

At least Claims 1 and 21 of the '481 Patent, 1 and 21 of the '939 Patent, 1 and 10 of the '796 Patent, 1 and 11 of the '331 Patent, 1, 21, 41, and 62 of the '461 Patent, and claims 1 and 11 of the '890 Patent are invalid for lack of written description and lack of enablement because, although the claims purport to encompass essentially all ways of evaluating movement of a body relative to an environment using a sensor that can detect acceleration, one of skill in the art would not have understood that the patentee possessed all such means based on the written description, nor would a skilled artisan be able to make or use the full scope of the inventions as claimed. Indeed, although the claims appear to be limited to evaluating the movement of a “body,” that is not a meaningful limitation because the patents make clear that a “body” can be essentially *any* object, whether organic or inorganic. *See, e.g.*, '481 patent at 2:3-6 (defining the term “body” as “any organic and inorganic object whose movement or position may suitably be evaluated relative to its environment”).

Notwithstanding the breadth of the claims, the patents disclose only limited, specific applications for evaluating the movement of a body. As just one example, the patents fail to disclose the full scope of sensor technology encompassed by the claims and, instead, reference a single, bi-axis accelerometer (ADXL202). Accordingly, one of skill in the art would not have understood that the patentee possessed all of the claimed sensor means based on the written description, nor would a skilled artisan be able to make and use the full scope of the invention given the limited sensor disclosure.

Likewise, although the claims are not limited to evaluating body movements in any

particular environment, the patents contain very limited disclosure about evaluating body movements in different environments. As just two examples, the patents contain no disclosure regarding how to evaluate the movement of a body in aqueous or zero-gravity environments or in virtual environments. Consequently, one of skill in the art would not have understood that the patentee possessed the ability to evaluate the movement of a body within the full range of claimed environments based on the written description, nor would a skilled artisan be able to make and use the full scope of the invention given the limited disclosure.

Similarly, the asserted patents' disclosure of the *type* of body movements is very limited and appears to relate primarily to fall monitor applications. *See, e.g., '481 patent* (describing the ability to distinguish between "walking, sitting, lying down, etc. versus tripping, falling down, etc.). Consequently, one of skill in the art would not have understood that the patentee possessed the ability to evaluate the types of movement required in motion-controlled gaming. For example, the asserted patents do not disclose how to detect swinging a bat or bowling a ball in the virtual environment of a video game. Accordingly, one of skill in the art would not have understood that the patentee possessed motion-controlled gaming methods and systems, nor are such methods and systems enabled by the disclosure of the asserted patents.

Furthermore, the patents do not contain sufficient disclosure concerning how to evaluate movement "relative to an environment." As a general matter, inertial sensors such as the bi-axis ADXL202 accelerometer allow one to evaluate movement of an object *in the abstract*, rather than relative to the object's environment. Unlike GPS, radar, electric field sensing, magnetic field sensing, optical tracking means, and other ways of evaluating movement which provide output *tethered to* the spatial characteristics of the environment, inertial sensors, such as the bi-axis ADXL202 accelerometer disclosed in the asserted patents, evaluate movement of an object

in the abstract, rather than relative to the object’s environment. Consequently, one of skill in the art would not have understood that the patentee possessed knowledge of evaluating movement “relative to an environment” (as opposed to in the abstract), nor is evaluating movement “relative to an environment” enabled by the disclosure of the asserted patents.

B. “Determine Whether Said Evaluated Body Movement Is Within Environmental Tolerance Independent of the Starting Attitude of The Sensor”

Claim 20 of the ’481 Patent and Claim 61 of the ’461 Patent are invalid under 112 ¶ 1 because there is no written description and no enabling disclosure for the claimed inventions because the patent does not disclose or describe “determin[ing] whether said evaluated body movement is within environmental tolerance independent of the starting attitude of the sensor.” Consequently, one of skill in the art would not have understood that the patentee possessed systems and methods for determining whether said evaluated body movement is within environmental tolerance independent of the starting attitude of the sensor. Nor would a skilled artisan be able to make or use the full scope of the claimed invention.

V. GROUNDS OF INVALIDITY BASED ON 35 U.S.C. § 101

The asserted claims of the patents-in-suit fail under 35 U.S.C. § 101. As interpreted by the Federal Circuit and the U.S. Supreme Court, claims run afoul of § 101 if they simply add conventional steps or technology to otherwise abstract concepts. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l.*, 134 S. Ct. 2347, 2358 (U.S. 2014) (“the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.”); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1300 (2012) (“simply appending conventional steps, specified at a high level of generality, to laws of nature, natural phenomena, and abstract ideas cannot make those laws, phenomena, and ideas patentable.”). Applying this same principle, cases from the Federal Circuit and the Supreme Court have found that general purpose

computer equipment, when appended to data manipulation and mathematical algorithms are not patentable. *Gottshalk v. Benson*, 409 U.S. 63, 71-72 (1972); *Parker v. Flook*, 437 U.S. 584, 594-95 (1978); *Cybersource*, 654 F.3d 1366 (Fed. Cir. 2011); *Fort Properties*, 671 F.3d 1317 (Fed. Cir. 2012); *Dealertrack, Inc. v. Huber*, 674 F.3d 1315 (Fed. Cir. 2012); *Bancorp Servs., LLC v. Sun Life Assurances Co. of Canada*, 687 F.3d 1266 (Fed. Cir. 2012); *Accenture Global Servs. GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336 (Fed. Cir. 2013).

To put it differently, when a computer processor is used to speed up calculations that could otherwise be performed in the human mind or with pencil and paper, the processor does not render the claim any less abstract. Under these cases, the claims at issue here are invalid: they claim data gathering using unspecified, and purely conventional, sensors (*e.g.* “a sensor, associable with said body, that senses dynamic and static accelerative phenomena of said body”) combined with mathematical calculations performed on conventional processors (*e.g.* “a processor, ... that processes said sensed dynamic and static accelerative phenomena as a function of at least one accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance.”). The claims are, therefore, directed to ineligible subject matter. All of the asserted claims suffer from this problem. None of the various limitations (which add different types of calculation call for detecting acceleration in various accesses) cause the claims to pass the machine or transformation test, tie the claims to a specific device, or otherwise render them patentable. Indeed, the purported breadth of the claims – which supposedly cover measuring the acceleration of *any* object in *any* environment demonstrates that they are not directed to a specific application, but to the abstract concept of detecting acceleration in excess of a threshold.

VI. RESERVATION OF RIGHTS

These invalidity contentions are made without the benefit of significant fact discovery,

expert discovery, or complete and sufficient infringement contentions from Plaintiff. NOA expressly reserves the right to supplement these invalidity contentions to address additional prior art or other information it may discover as discovery progresses in this case. NOA further reserves its right to amend these contentions once Plaintiff has produced documents in response to NOA's document requests related to the validity of the asserted patents.

Dated: August 18, 2014

/s/ Stephen P. McBride

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CERTIFICATE OF SERVICE

The undersigned affirms that I have this 18th day of August, 2014 caused a copy of the foregoing document to be served upon counsel for Plaintiff via electronic mail.

/s/ Laura G. Williams

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 5F ¹		
Independent Claim 1		U.S. Patent No. 5,615,132 (Horton)
[1.1]	A system within a communications device capable of evaluating movement of a body relative to an environment, said system comprising:	<p>The invention relates to tracking systems, particularly to such systems that determine position and orientation of an object in a limited volume using accelerometers.</p> <p>Horton '132, col. 1 ll. 9-11.</p> <p>The invention is a three-dimensional position and orientation tracking system that uses accelerometers to measure acceleration in the six-degrees of freedom (e.g., x, y, z position coordinates and roll, pitch, yaw orientation components) of a moveable object (e.g., a head-mounted display unit, or a wristband/data glove). Conventional accelerometers, as used herein, measure acceleration in one linear direction (e.g., x, y, z, or combination thereof, coordinate axis), but may report acceleration data as a nonlinear function of, for example, acceleration or time. Acceleration data on the moveable object is periodically (e.g., 50-300 Hz) received by a tracking processor. The tracking processor generates both position and orientation information on the object relative to a simulation environment as a function of the acceleration data.</p> <p>Horton '132, col. 2 ll. 15-29.</p>

¹ To the extent Plaintiff alleges that this reference does not disclose any portion of any limitation, the allegedly missing portions are inherently disclosed in this reference or are obvious modifications of this reference in view of the knowledge of one of ordinary skill in the art at the time the inventions were made, as exemplified by the prior art references listed in Defendant's Initial Invalidity Contentions. Moreover, it would have been obvious to combine this reference with one or more other prior art references listed in Defendant's Initial Invalidity Contentions for at least the reasons set forth in Defendant's Initial Invalidity Contentions.

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 5F¹

[1.2] a sensor, associable with said body, that senses dynamic and static accelerative phenomena of said body, and

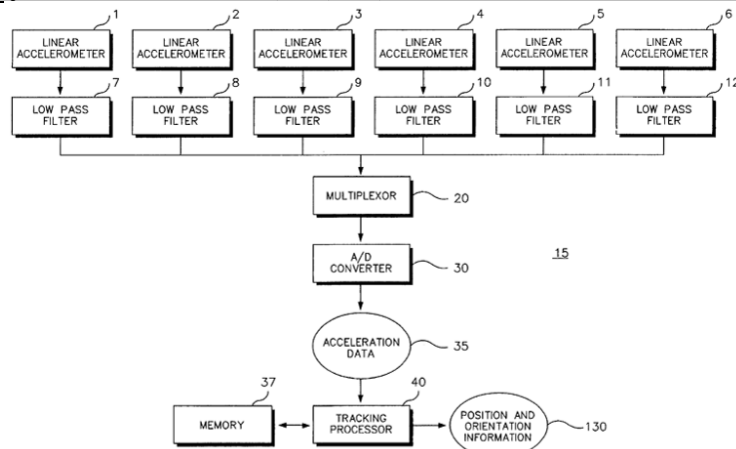


FIGURE 1

FIG. 1 is a simplified block diagram illustrating the components used in the tracking system invention. Conventional accelerometers 1-6 measure acceleration in one linear direction (e.g., x, y, z, or combination thereof, coordinate direction), but may report acceleration data, for example, as a nonlinear function of time (e.g., $v(t)$, where v is voltage) or acceleration. ***Accelerometers 1-6 are capable of measuring accelerations of at least ± 2 G. This allows for 1 G due to gravity and 1 G of movement acceleration.*** In the preferred embodiment, accelerometers should be shock-protected or resistant so that they are not damaged if dropped. To ensure high accuracy, a high signal to noise ratio (SNR) is desirable--a lower bound of approximately 10^2 or 40 dB is preferred.

Horton '132, col. 3 ll. 26-40.

In FIG. 2, two accelerometer mounting points 301 and 302 are located on object 300 (e.g., two locations on a head-mounted display (HMD) unit, or two locations on the wrist of a data glove). Object 300 may be, for example, a head-mounted display unit, a wristband/data glove, or other similar device attached to a user to monitor the user's movement. In this example, each mounting point 301, 302 contains three accelerometers (e.g., accelerometers 1-3 and 4-6 respectively).

Horton '132, col. 5 ll. 7-15.

[1.3] a processor, associated with said sensor, that processes said sensed dynamic and static accelerative phenomena

Output from A/D converter 30 is acceleration data 35. Acceleration data 35 may be reported, for example, as a nonlinear function of time (e.g., $v(t)$ where v is volts). ***Acceleration data 35 is input to tracking processor 40. Tracking processor 40 can be, for example, a standard***

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 5F¹		
	as a function of at least one accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance	<p><i>computer microprocessor such as an INTEL 486, Motorola 68000, or Pentium-based microprocessor. Tracking processor 40 is discussed in further detail with reference to FIGS. 3-5 below.</i> Memory unit 37 is coupled to tracking processor 40 and is used for storing program instruction steps and storing data for execution by tracking processor 40. Memory unit 37 is a conventional computer memory unit such as a magnetic hard disk storage unit or random access memory (RAM) on a chip. Output from tracking processor 40 is position and orientation information 130.</p> <p>Horton '132, col. 4 ll. 32-46, <i>see also</i> col. 7 ll. 6-55.</p>
[1.4]	wherein said processor generates tolerance indicia in response to said determination; and	<p>The discussion of claim limitations 1.2 and 1.3 above is incorporated by reference herein.</p> <p>In one embodiment, position and orientation information 130 is transmitted in a data signal consisting of six elements--three position elements (e.g., x, y, z) and three orientation elements (e.g., roll, pitch, yaw). Each element is two bytes long. Each value or element is in twos complement format, thus the decimal values -32,768 to 32,767 are covered. Measurements are the decimal value divided by 100. Thus, measurements from -327.68 to 327.67 (e.g., degrees, cm, inches, feet or other angle or linear measurements) can be transmitted. Information 130 is transmitted in a standard serial interface of three lines--transmit, receive, and ground--standard 8 bit words, no parity, and 1 stop bit. A mode of operation can be specified as follows:</p> <p>R--request mode (default). Position and orientation is transmitted upon request.</p> <p>F--free running mode. Position and orientation is transmitted as calculated.</p> <p>M--mode change. Informs tracker that mode in which position and orientation is transmitted (R or F) will change.</p> <p>G--get data. Tracker will transmit position and orientation information 130.</p> <p>H--halt. Turns off tracking system.</p> <p>C--calibrate. Runs or reruns the initialization routine 48.</p> <p>Alternatively, a file can be created with records of the same format</p>

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 5F ¹		
		described above. Horton '132, col.4 l.7 – col. 5 l.6
[1.5]	wherein said communication device transmits said tolerance indicia.	See the discussion in claim 4 of the '481 patent, which is incorporated by reference herein.
Dependent Claim 3		
[3]	The system as claimed in claim 1 wherein said communications device comprises one of: a hand held computer, a laptop computer and a wireless Internet access device.	See the discussion in claim 1, which is incorporated by reference herein.
Independent Claim 10		
[10.1]	A method for operating a system within a communications device, wherein said system is capable of evaluating movement of a body relative to an environment, wherein said system comprises a sensor, associable with said body, that senses dynamic and static accelerative phenomena of said body, and	<p>The invention relates to tracking systems, particularly to such systems that determine position and orientation of an object in a limited volume using accelerometers.</p> <p>Horton '132, col. 1 ll. 9-11.</p> <p>The invention is a three-dimensional position and orientation tracking system that uses accelerometers to measure acceleration in the six-degrees of freedom (e.g., x, y, z position coordinates and roll, pitch, yaw orientation components) of a moveable object (e.g., a head-mounted display unit, or a wristband/data glove). Conventional accelerometers, as used herein, measure acceleration in one linear direction (e.g., x, y, z, or combination thereof, coordinate axis), but may report acceleration data as a nonlinear function of, for example, acceleration or time. Acceleration data on the moveable object is periodically (e.g., 50-300 Hz) received by a tracking processor. The tracking processor generates both position and orientation information on the object relative to a simulation environment as a function of the acceleration data.</p> <p>Horton '132, col. 2 ll. 15-29.</p>
[10.2]	a processor, associated with said sensor, that processes said sensed dynamic and static	<p>Output from A/D converter 30 is acceleration data 35. Acceleration data 35 may be reported, for example, as a nonlinear function of time (e.g., v(t) where v is volts). <i>Acceleration data 35 is input to tracking processor 40.</i></p>

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 5F ¹		
	<p>accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance, wherein said method comprises the steps of:</p>	<p><i>Tracking processor 40 can be, for example, a standard computer microprocessor such as an INTEL 486, Motorola 68000, or Pentium-based microprocessor. Tracking processor 40 is discussed in further detail with reference to FIGS. 3-5 below.</i> Memory unit 37 is coupled to tracking processor 40 and is used for storing program instruction steps and storing data for execution by tracking processor 40. Memory unit 37 is a conventional computer memory unit such as a magnetic hard disk storage unit or random access memory (RAM) on a chip. Output from tracking processor 40 is position and orientation information 130.</p> <p>Horton '132, col. 4 ll. 32-46, <i>see also</i> col. 7 ll. 6-55.</p> <p><i>In main loop 41 tracking processor 40 reads 44 acceleration data 35 from accelerometers 1-6 and calculates 60 position and orientation information 130.</i> Calculation 60 is discussed in more detail with reference to FIG. 4 below. <i>In operation, main loop 41 is repeated at 50-300 Hz or faster depending on hardware capability (e.g., capability of tracking processor 40 or other components in FIG. 1).</i> A fast loop rate 41 ensures that simulation environment 180 is updated with current position and orientation information 130.</p> <p>Horton '132, col. 6 ll. 25-33.</p> <p>FIG. 1 is a simplified block diagram illustrating the components used in the tracking system invention. Conventional accelerometers 1-6 measure acceleration in one linear direction (e.g., x, y, z, or combination thereof, coordinate direction), but may report acceleration data, for example, as a nonlinear function of time (e.g., v(t), where v is voltage) or acceleration. <i>Accelerometers 1-6 are capable of measuring accelerations of at least ± 2 G. This allows for 1 G due to gravity and 1 G of movement acceleration.</i> In the preferred embodiment, accelerometers should be shock-protected or resistant so that they are not damaged if dropped. To ensure high accuracy, a high signal to noise ratio (SNR) is desirable--a lower bound of approximately 10^2 or 40 dB is preferred.</p> <p>Horton '132, col. 3 ll. 26-40.</p>
[10.3]	<p>generating tolerance indicia in said processor in response to said determination of whether said evaluated</p>	<p>The discussion of claim limitations 1.2 and 1.3 above is incorporated by reference herein.</p> <p>In one embodiment, position and orientation information 130 is transmitted in a data signal consisting of six elements--three position</p>

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 5F¹		
	body movement is within said environmental tolerance; and	<p>elements (e.g., x, y, z) and three orientation elements (e.g., roll, pitch, yaw). Each element is two bytes long. Each value or element is in twos complement format, thus the decimal values -32,768 to 32,767 are covered. Measurements are the decimal value divided by 100. Thus, measurements from -327.68 to 327.67 (e.g., degrees, cm, inches, feet or other angle or linear measurements) can be transmitted. Information 130 is transmitted in a standard serial interface of three lines--transmit, receive, and ground--standard 8 bit words, no parity, and 1 stop bit. A mode of operation can be specified as follows:</p> <p>R--request mode (default). Position and orientation is transmitted upon request.</p> <p>F--free running mode. Position and orientation is transmitted as calculated.</p> <p>M--mode change. Informs tracker that mode in which position and orientation is transmitted (R or F) will change.</p> <p>G--get data. Tracker will transmit position and orientation information 130.</p> <p>H--halt. Turns off tracking system.</p> <p>C--calibrate. Runs or reruns the initialization routine 48.</p> <p>Alternatively, a file can be created with records of the same format described above.</p> <p>Horton '132, col.4 l.7 – col. 5 l.6</p>
[10.4]	transmitting said tolerance indicia through said communications device.	See the discussion in claim 4 of the '481 patent, which is incorporated by reference herein.
Dependent Claim 12		
[12]	The method as claim in claim 10 wherein said communications device comprises one of: a hand held computer, a laptop computer and a wireless Internet access device.	See the discussion in claim 10, which is incorporated by reference herein.

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Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 33F ¹		
Independent Claim 1		Crossbow Technology, Inc.'s Position and Orientation Sensing System (the "Crossbow System") ²
[1.1]	A system within a communications device capable of evaluating movement of a body relative to an environment, said system comprising:	<p>The invention relates to tracking systems, particularly to such systems that determine position and orientation of an object in a limited volume using accelerometers.</p> <p>U.S. Patent No. 5,615,132 ("Horton '132"), col. 1 ll. 9-11.</p> <p>The invention is a three-dimensional position and orientation tracking system that uses accelerometers to measure acceleration in the six-degrees of freedom (e.g., x, y, z position coordinates and roll, pitch, yaw orientation components) of a moveable object (e.g., a head-mounted display unit, or a wristband/data glove). Conventional accelerometers, as used herein, measure acceleration in one linear direction (e.g., x, y, z, or combination thereof, coordinate axis), but may report acceleration data as a nonlinear function of, for example, acceleration or time. Acceleration data on the moveable object is periodically (e.g., 50-300 Hz) received by a tracking processor. The tracking processor generates both position and orientation information on the object relative to a simulation environment as a function of the acceleration data.</p> <p>Horton '132, col. 2 ll. 15-29.</p>

¹ To the extent Plaintiff alleges that this reference does not disclose any portion of any limitation, the allegedly missing portions are inherently disclosed in this reference or are obvious modifications of this reference in view of the knowledge of one of ordinary skill in the art at the time the inventions were made, as exemplified by the prior art references listed in Defendant's Initial Invalidity Contentions. Moreover, it would have been obvious to combine this reference with one or more other prior art references listed in Defendant's Initial Invalidity Contentions for at least the reasons set forth in Defendant's Initial Invalidity Contentions.

² Crossbow Technology, Inc.'s Position and Orientation Sensing System, as described in at least U.S. Patent No. 5,615,132 ("Horton '132") and U.S. Patent No. 5,819,206 ("Horton '206"), teaches at least the indicated claim limitations. The citations to Horton '132, Horton '206, and other materials describing the Crossbow System set forth below are non-exhaustive and are provided for exemplary purposes only. To avoid duplication and cumulative excerpts, exemplary quotations and citations from certain of the above-mentioned references are listed throughout this chart. Similar quotes and references can be found in other listed references. The Defendant reserves the right to rely upon additional evidence concerning the Crossbow System and other Crossbow Technology's products developed or produced during the course of discovery.

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 33F¹

[1.2] a sensor, associable with said body, that senses dynamic and static accelerative phenomena of said body, and

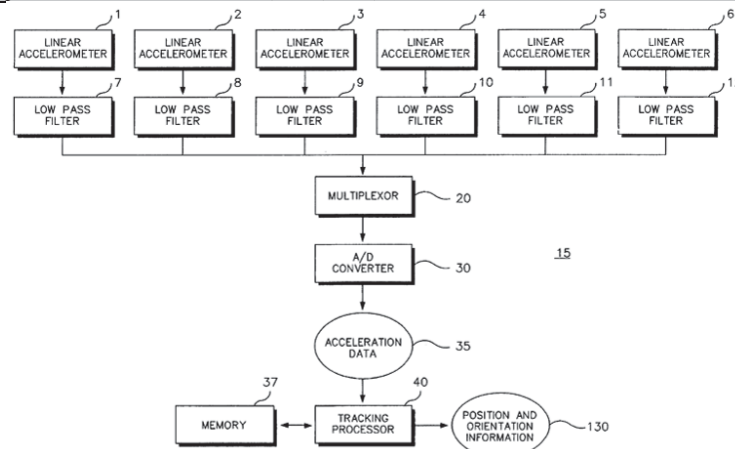


FIGURE 1

FIG. 1 is a simplified block diagram illustrating the components used in the tracking system invention. Conventional accelerometers 1-6 measure acceleration in one linear direction (e.g., x, y, z, or combination thereof, coordinate direction), but may report acceleration data, for example, as a nonlinear function of time (e.g., $v(t)$, where v is voltage) or acceleration. ***Accelerometers 1-6 are capable of measuring accelerations of at least ± 2 G. This allows for 1 G due to gravity and 1 G of movement acceleration.*** In the preferred embodiment, accelerometers should be shock-protected or resistant so that they are not damaged if dropped. To ensure high accuracy, a high signal to noise ratio (SNR) is desirable--a lower bound of approximately 10^2 or 40 dB is preferred.

Horton '132, col. 3 ll. 26-40.

In FIG. 2, two accelerometer mounting points 301 and 302 are located on object 300 (e.g., two locations on a head-mounted display (HMD) unit, or two locations on the wrist of a data glove). Object 300 may be, for example, a head-mounted display unit, a wristband/data glove, or other similar device attached to a user to monitor the user's movement. In this example, each mounting point 301, 302 contains three accelerometers (e.g., accelerometers 1-3 and 4-6 respectively).

Horton '132, col. 5 ll. 7-15.

[1.3] a processor, associated with said sensor, that processes said sensed dynamic and static accelerative phenomena

Output from A/D converter 30 is acceleration data 35. Acceleration data 35 may be reported, for example, as a nonlinear function of time (e.g., $v(t)$ where v is volts). ***Acceleration data 35 is input to tracking processor 40. Tracking processor 40 can be, for example, a standard***

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 33F ¹		
	as a function of at least one accelerative event characteristic to thereby determine whether said evaluated body movement is within environmental tolerance	<p><i>computer microprocessor such as an INTEL 486, Motorola 68000, or Pentium-based microprocessor. Tracking processor 40 is discussed in further detail with reference to FIGS. 3-5 below.</i> Memory unit 37 is coupled to tracking processor 40 and is used for storing program instruction steps and storing data for execution by tracking processor 40. Memory unit 37 is a conventional computer memory unit such as a magnetic hard disk storage unit or random access memory (RAM) on a chip. Output from tracking processor 40 is position and orientation information 130.</p> <p>Horton '132, col. 4 ll. 32-46, <i>see also</i> col. 7 ll. 6-55.</p>
[1.4]	wherein said processor generates tolerance indicia in response to said determination; and	<p>The discussion of claims 1.2 and 1.3 is incorporated by reference.</p> <p>In one embodiment, position and orientation information 130 is transmitted in a data signal consisting of six elements--three position elements (e.g., x, y, z) and three orientation elements (e.g., roll, pitch, yaw). Each element is two bytes long. Each value or element is in twos complement format, thus the decimal values -32,768 to 32,767 are covered. Measurements are the decimal value divided by 100. Thus, measurements from -327.68 to 327.67 (e.g., degrees, cm, inches, feet or other angle or linear measurements) can be transmitted. Information 130 is transmitted in a standard serial interface of three lines--transmit, receive, and ground--standard 8 bit words, no parity, and 1 stop bit. A mode of operation can be specified as follows:</p> <p>R--request mode (default). Position and orientation is transmitted upon request.</p> <p>F--free running mode. Position and orientation is transmitted as calculated.</p> <p>M--mode change. Informs tracker that mode in which position and orientation is transmitted (R or F) will change.</p> <p>G--get data. Tracker will transmit position and orientation information 130.</p> <p>H--halt. Turns off tracking system.</p> <p>C--calibrate. Runs or reruns the initialization routine 48.</p> <p>Alternatively, a file can be created with records of the same format described above.</p>

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 33F ¹		
		Horton '132, col.4 l.7 – col. 5 l.6
[1.5]	wherein said communication device transmits said tolerance indicia.	See the discussion in claim 1.5, which is incorporated by reference herein.
Dependent Claim 3		
[3]	The system as claimed in claim 1 wherein said communications device comprises one of: a hand held computer, a laptop computer and a wireless Internet access device.	See the discussion in claim 1, which is incorporated by reference herein.
Independent Claim 10		
[10.1]	A method for operating a system within a communications device, wherein said system is capable of evaluating movement of a body relative to an environment, wherein said system comprises a sensor, associable with said body, that senses dynamic and static accelerative phenomena of said body, and	<p>The invention relates to tracking systems, particularly to such systems that determine position and orientation of an object in a limited volume using accelerometers.</p> <p>Horton '132, col. 1 ll. 9-11.</p> <p>The invention is a three-dimensional position and orientation tracking system that uses accelerometers to measure acceleration in the six-degrees of freedom (e.g., x, y, z position coordinates and roll, pitch, yaw orientation components) of a moveable object (e.g., a head-mounted display unit, or a wristband/data glove). Conventional accelerometers, as used herein, measure acceleration in one linear direction (e.g., x, y, z, or combination thereof, coordinate axis), but may report acceleration data as a nonlinear function of, for example, acceleration or time. Acceleration data on the moveable object is periodically (e.g., 50-300 Hz) received by a tracking processor. The tracking processor generates both position and orientation information on the object relative to a simulation environment as a function of the acceleration data.</p> <p>Horton '132, col. 2 ll. 15-29.</p>
[10.2]	a processor, associated with said sensor, that processes said sensed dynamic and static accelerative event characteristic to thereby determine whether said	<p>Output from A/D converter 30 is acceleration data 35. Acceleration data 35 may be reported, for example, as a nonlinear function of time (e.g., v(t) where v is volts). <i>Acceleration data 35 is input to tracking processor 40. Tracking processor 40 can be, for example, a standard computer microprocessor such as an INTEL 486, Motorola 68000, or Pentium-based microprocessor. Tracking processor</i></p>

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 33F ¹		
	evaluated body movement is within environmental tolerance, wherein said method comprises the steps of:	<p>40 is discussed in further detail with reference to FIGS. 3-5 below. Memory unit 37 is coupled to tracking processor 40 and is used for storing program instruction steps and storing data for execution by tracking processor 40. Memory unit 37 is a conventional computer memory unit such as a magnetic hard disk storage unit or random access memory (RAM) on a chip. Output from tracking processor 40 is position and orientation information 130.</p> <p>Horton '132, col. 4 ll. 32-46, <i>see also</i> col. 7 ll. 6-55.</p> <p><i>In main loop 41 tracking processor 40 reads 44 acceleration data 35 from accelerometers 1-6 and calculates 60 position and orientation information 130.</i> Calculation 60 is discussed in more detail with reference to FIG. 4 below. <i>In operation, main loop 41 is repeated at 50-300 Hz or faster depending on hardware capability (e.g., capability of tracking processor 40 or other components in FIG. 1).</i> A fast loop rate 41 ensures that simulation environment 180 is updated with current position and orientation information 130.</p> <p>Horton '132, col. 6 ll. 25-33.</p> <p>FIG. 1 is a simplified block diagram illustrating the components used in the tracking system invention. Conventional accelerometers 1-6 measure acceleration in one linear direction (e.g., x, y, z, or combination thereof, coordinate direction), but may report acceleration data, for example, as a nonlinear function of time (e.g., $v(t)$, where v is voltage) or acceleration. <i>Accelerometers 1-6 are capable of measuring accelerations of at least ± 2 G. This allows for 1 G due to gravity and 1 G of movement acceleration.</i> In the preferred embodiment, accelerometers should be shock-protected or resistant so that they are not damaged if dropped. To ensure high accuracy, a high signal to noise ratio (SNR) is desirable--a lower bound of approximately 10^2 or 40 dB is preferred.</p> <p>Horton '132, col. 3 ll. 26-40.</p>
[10.3]	generating tolerance indicia in said processor in response to said determination of whether said evaluated body movement is within said environmental tolerance;	<p>The discussion of claims 1.2 and 1.3 is incorporated by reference.</p> <p>In one embodiment, position and orientation information 130 is transmitted in a data signal consisting of six elements--three position elements (e.g., x, y, z) and three orientation elements (e.g., roll, pitch, yaw). Each element is two bytes long. Each value or element is in twos complement format, thus the decimal values -32,768 to 32,767 are covered. Measurements are the decimal value divided by 100. Thus,</p>

Chart of Invalidity of U.S. Patent No. 6,864,796, Exhibit 33F¹		
	and	<p>measurements from -327.68 to 327.67 (e.g., degrees, cm, inches, feet or other angle or linear measurements) can be transmitted. Information 130 is transmitted in a standard serial interface of three lines--transmit, receive, and ground--standard 8 bit words, no parity, and 1 stop bit. A mode of operation can be specified as follows:</p> <p>R--request mode (default). Position and orientation is transmitted upon request.</p> <p>F--free running mode. Position and orientation is transmitted as calculated.</p> <p>M--mode change. Informs tracker that mode in which position and orientation is transmitted (R or F) will change.</p> <p>G--get data. Tracker will transmit position and orientation information 130.</p> <p>H--halt. Turns off tracking system.</p> <p>C--calibrate. Runs or reruns the initialization routine 48.</p> <p>Alternatively, a file can be created with records of the same format described above.</p> <p>Horton '132, col.4 l.7 – col. 5 l.6</p>
[10.4]	transmitting said tolerance indicia through said communications device.	See the discussion in claim 10.3, which is incorporated by reference herein.
Dependent Claim 12		
[12]	The method as claim in claim 10 wherein said communications device comprises one of: a hand held computer, a laptop computer and a wireless Internet access device.	See the discussion in claim 10, which is incorporated by reference herein.

109183715 v2

From: Michael C. Wilson
Sent: Monday, December 05, 2016 12:22 PM
To: Smith, Stephen; McBride, Stephen; Wallace Dunwoody; Jordan C. Strauss; Jacob LaCombe
Cc: Whelan, Rose; Thomas Wright; Alex Whitman
Subject: RE: iLife v Nintendo -- deposition of Mike Horton

Stephen:

I just left you a voice mail message. Given your statement that NOA intends to proceed with the Horton deposition, and your subsequent notice of same, I believe the parties have adequately conferred about plaintiff's proposed motion to quash. Nevertheless, I am available today for an additional formal meet and confer. If I do not hear from you by 3:30pm CST, and given the impending proposed deposition date, we will file the motion to quash to obtain a ruling from the court on the proposed discovery.

Nintendo notified iLife of this deposition for the first time on November 28, and then unilaterally scheduled the deposition without conferring, contrary to *Dondi Properties Corp. v. Commerce Savs. & Loan Ass'n*, 121 F.R.D. 284 (N.D. Tex. 1988) (*en banc*). As a result, Nintendo did not provide sufficient advance notice of the proposed deposition to give iLife and the Court time to address the dispute. Therefore, please confirm Nintendo will not proceed with the deposition pending a decision from the court.

Michael C. Wilson

Munck Wilson Mandala LLP

600 Banner Place Tower, 12770 Coit Road, Dallas, Texas 75251

Direct: 972-628-3657

Cell: 214-215-4076

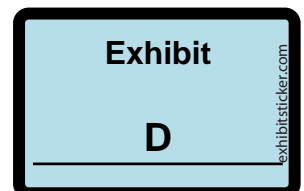
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From: Smith, Stephen [mailto:stephen.smith@cooley.com]
Sent: Wednesday, November 30, 2016 11:19 AM
To: Michael C. Wilson; McBride, Stephen; Wallace Dunwoody; Jordan C. Strauss; Jacob LaCombe
Cc: Whelan, Rose; Thomas Wright; Alex Whitman
Subject: RE: iLife v Nintendo -- deposition of Mike Horton

Michael,



As you know, NOA disclosed the "Crossbow System" as well as Mr. Horton in our preliminary invalidity contentions in August 2014. During the course of fact discovery, NOA discovered that Crossbow Technology had been acquired by third-party Moog, Inc. and consequently NOA served document and deposition subpoenas on Moog. Moog produced its responsive documents shortly before the stay was entered and a copy of those documents were provided to iLife before the stay as well. Now NOA seeks to depose Mr. Horton during the fact discovery period regarding the prior art systems disclosed in the contentions and further described in the documents provided by Moog. His testimony will elucidate the

invalidating nature of the products. Contrary to your suggestion, Mr. Horton is a prior art fact witness, not an undisclosed expert witness. Third party prior art inventors are routinely deposed in patent cases and are not considered experts.

iLife also does not have standing to move to quash a non-party notice of deposition. The appropriate vehicle to exclude what you believe is untimely evidence is a motion in limine or motion to strike following expert discovery, not a motion to quash. iLife may choose not to attend the deposition, but we are proceeding as planned.

Finally, it appears iLife is taking the position that the parties' preliminary contentions are final. If that is the case, we'd be amenable to discussing with our client a stipulation whereby the parties agree that the contentions are final and will not move to amend.

Steve

From: Michael C. Wilson [<mailto:mwilson@munckwilson.com>]

Sent: Tuesday, November 29, 2016 2:53 PM

To: McBride, Stephen; Wallace Dunwoody; Jordan C. Strauss; Jacob LaCombe

Cc: Smith, Stephen; Whelan, Rose; Thomas Wright; Alex Whitman

Subject: RE: iLife v Nintendo -- deposition of Mike Horton

Stephen:

Any testimony from Mike Horton is not relevant to any claim or defense in this case. If NOA notices the deposition, iLife intends to file a motion to quash and for protective order.

First, NOA's invalidity contentions identify the alleged Crossbow "system" as prior art. However, NOA's disclosure of the alleged system relied entirely on prior art patents. For example, NOA's invalidity charts based on such system regarding the '796 patent (Exhibits 5F and 33F to NOA's contentions) cite only to US Patent No. 5,615,132 and no other sources of proof. As you know, pursuant to 35 USC § 315(e)(2), NOA is estopped from asserting any grounds for invalidity that it could have raised in the IPR proceeding, including invalidity based on what is disclosed in the '132 patent (NOA did not chart US Patent 5,819,206). Because NOA is estopped from asserting any invalidity defense based on the prior art disclosed in its contentions, the deposition is not relevant.

Second, NOA has not and cannot amend its contentions to assert new invalidity arguments based on other aspects of the Crossbow system. NOA served its invalidity contentions on August 18, 2014, and identified the Crossbow system as potential prior art at that time. Despite its knowledge of the Crossbow system early in the case, NOA has not diligently sought to develop proof regarding the system or diligently sought to amend its contentions regarding such system, as NOA must show to amend under local Patent Rule 3-7. In addition, iLife would be prejudiced by any amendment to invalidity contentions at this late stage. Since August of 2014, the parties have disclosed and twice briefed claim construction, held two claim construction hearings, prosecuted NOA's *inter partes* review (which also involved claim construction issues and required iLife to take positions regarding scope of the '796 patent), and taken party depositions, including NOA's corporate representative regarding invalidity issues. Because any defense based on the alleged Crossbow system (other than the estopped defense based on the '132 patent) is not part of NOA's invalidity contentions, and NOA has no basis to amend such contentions, Mr. Horton's testimony is not relevant.

Third, any proposed testimony of Mr. Horton likely will be technical in nature and would therefore constitute undisclosed expert testimony.

For at least these reasons, iLife opposes the requested deposition of Mr. Horton. In the event NOA proceeds with noticing the deposition, we are available to confer on a motion to quash and for protective order.

Michael C. Wilson

Munck Wilson Mandala LLP

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From: McBride, Stephen [<mailto:smcbride@cooley.com>]

Sent: Monday, November 28, 2016 2:36 PM

To: Michael C. Wilson; Wallace Dunwoody; Jordan C. Strauss; Jacob LaCombe

Cc: Smith, Stephen; Whelan, Rose; Thomas Wright; Alex Whitman

Subject: iLife v Nintendo -- deposition of Mike Horton

Counsel,

Nintendo intends to depose Mike Horton (formerly of Moog, Inc.) on December 8, 2016 at 9:00 am at Cooley's Palo Alto office, located at 3175 Hanover Street, Palo Alto, CA, 94304. Please let us know if iLife would like to attend and, if so, confirm whether December 8 works for iLife.

Best regards,

Stephen McBride

Cooley LLP

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11951 Freedom Drive • Reston, VA 20190-5656

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